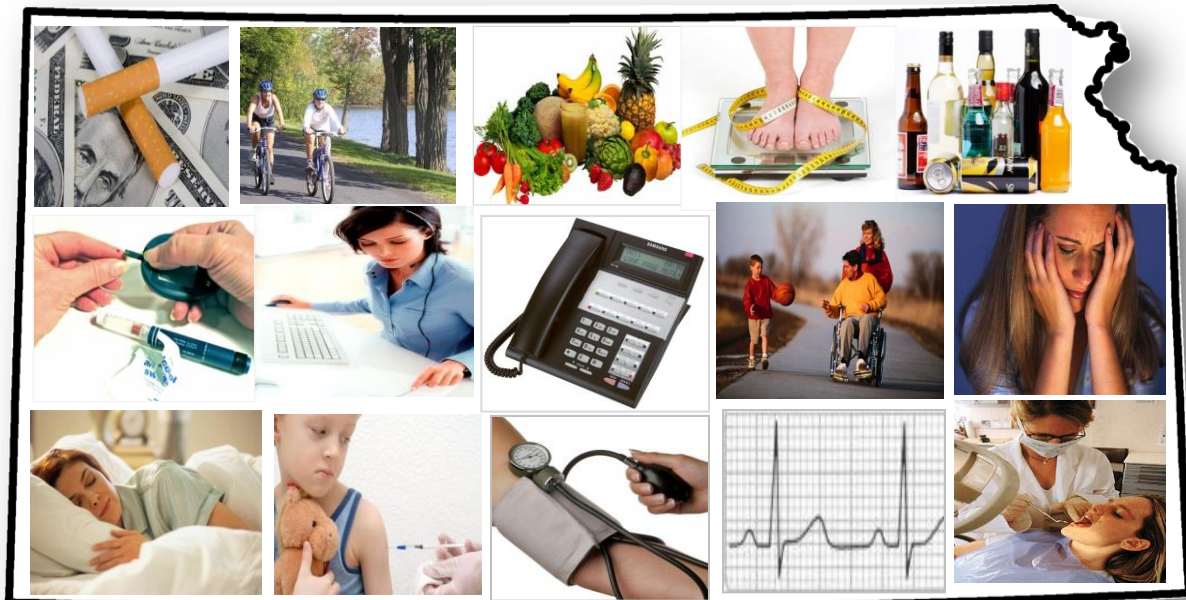


Health Risk Behaviors of Kansans

2011 Kansas Behavioral Risk Factor Surveillance System



Kansas BRFSS
Bureau of Health Promotion
Kansas Department of Health and Environment
1000 SW Jackson St., Suite 230
Topeka, Kansas 66612-1274
www.kdheks.gov/brfss/index.html

Health Risk Behaviors of Kansans 2011

State of Kansas
Sam Brownback, Governor

Kansas Department of Health and Environment
Dr. Robert Moser, Secretary

Report Preparation:

Pratik Pandya, MPH
Advanced Epidemiologist
Bureau of Health Promotion (BHP)

Report Supervision:

Ghazala Perveen, MBBS, PhD, MPH
Director of Science and Surveillance/Health Officer II
Bureau of Health Promotion (BHP)

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**Kansas Department of Health and Environment
Bureau of Health Promotion**

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Kansas Department of Health and Environment (KDHE)

Mission

To protect and improve the health and environment of all Kansans

Vision

Healthy Kansans living in safe and sustainable environments

www.kdheks.gov



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BRFSS Overview

The Behavioral Risk Factor Surveillance System (BRFSS) is a random digit dial telephone survey of non-institutionalized adults age 18 years and older. If applicable, adult respondents also provide limited data on a randomly selected child in the household via surrogate interview. The BRFSS is coordinated and partially funded by the Centers for Disease Control and Prevention and is the largest continuously conducted telephone survey of population health risk in the world. It is conducted in every state, the District of Columbia, and several United States territories. The first BRFSS survey in Kansas was conducted as a point-in-time survey in 1990. Kansas has conducted the BRFSS survey annually since 1992.

The overall goal of the BRFSS is to develop and maintain the capacity for conducting population-based health risk surveys via telephone in Kansas. BRFSS data are used for the following:

- Monitoring the leading contributors to morbidity and premature death
- Tracking health status and assessing trends
- Measuring public knowledge, attitudes, and opinions
- Program planning
 - Needs assessment
 - Development of goals and objectives
 - Identification of target groups
- Policy development
- Evaluation of public health programs

Data from BRFSS are weighted to account for the complex sample design and non-response bias such that the resulting estimates will be representative of the underlying population as a whole as well as for target subpopulations.

Changes in BRFSS survey methodology

In recent years, the proportion of U.S. households with only cellular telephone (cell phone) service has been rising steadily. The increase has been more rapid since 2009. More than 3 of every 10 American households (31.6%) had only cell phone service during the first half of 2011. In the first half of 2003 cell phone only service was only 3 percent. The percentage of households with both landline and cell phone service, receiving all or almost all calls on the cell phone is also increasing. In 2011, nearly 1 of every 6 U.S. households (16.4%) with dual phone service received all or almost all calls on cell phones. The demographic characteristics of adults living in cell phone only service households are different. These adults are more likely to be: young, males, Hispanics, non Hispanics African Americans, living alone or with unrelated adults, living in poverty or near poverty, and renting a home. These

changes in phone use represent a threat to the validity of traditional Random Digit Dialing landline phone surveys such as the BRFSS.

To maintain representativeness, coverage and validity of data, changes in the survey methodology were made beginning in 2011. These changes include:

1. Use of dual frame sampling method (landline and cell phone samples) instead of single frame method (landline phone sample). The sample includes:
 - Adults 18 years and older living in a private residence with landline phone service
 - Adults 18 years and older living in a private residence with cell phone only service (at least 20% of total sample of complete interviews)
2. Use of the Iterative Proportional Fitting weighting method (Raking method) in place of the post stratification weighting method to improve the weighting, adjustment and estimation methods. The raking method adjusted the survey sample for age, sex, race and ethnicity, education level, marital status, home ownership and telephone type (landline/cell) to increase the representativeness of survey estimates for the general population.

Impact of New Survey Methodology on 2011 BRFSS Prevalence Estimates of Health Indicators

Changes in the 2011 BRFSS methodology will influence the state and national-level prevalence estimates for 2011 and subsequent years. Size and direction of the effect of new methodology on the prevalence estimates varies by health indicators. Changes in the 2011 data are likely to show indications of somewhat higher occurrences of risk behaviors common to younger adults and to certain racial or ethnic minority groups. The absolute increases or decreases in the prevalence estimates of health indicators from 2010 to 2011 BRFSS do not show any real changes in the actual prevalence of diseases, risk factors/behaviors and other health indicators in the general population. These variations in the estimates are caused by the addition of cell phone households to the survey sampling frame and adoption of a new advanced statistical method for weighting of the survey data. Comparisons cannot be made between the prevalence estimates of the health indicators generated for the previous years and those generated for 2011. The 2011 data cannot be compared to data from 2010 and preceding years to examine trends as prevalence estimates cannot be compared and interpreted using data generated from two different methodologies. The 2011 estimates will constitute a new baseline for monitoring trends of health indicators in subsequent years.

Analysis, Interpretation and Use of 2011 Kansas BRFSS Data

For analysis, the 2011 Kansas BRFSS dataset cannot be combined with those from previous years as sampling and weighting methods are different. Continue using weighted data analysis techniques for analysis of 2011 data. Interpretation of prevalence estimates has not changed. 2011 BRFSS provides prevalence estimates of diseases, risk factors/behaviors and other health indicators for

adult Kansans 18 years and older. 2011 BRFSS also provides prevalence estimates of health indicators for various socio-demographic subgroups in Kansas. The prevalence estimates from 2011 Kansas BRFSS are representative of non-institutionalized adults' ages 18 years and older living in private residences with landline and/or cell phone service.

2011 BRFSS data can be reliably used for: examining burden of public health issues in Kansas, planning and evaluation of public health programs to address these issues, public health decision making, leveraging funding opportunities and public education.

The 2011 survey consisted of 224 questions and took an average of 25 minutes to complete. Survey topics on the 2011 Kansas BRFSS core section included: health status, healthy days, health care access, hypertension awareness, cholesterol awareness, chronic health conditions, tobacco use, demographics, fruits and vegetables, exercise, disability, arthritis burden, seatbelt use, immunization, alcohol consumption, prevention counseling for alcohol use, falls, seatbelt use, drinking and driving, women's health, prostate cancer screening, colorectal cancer screening, HIV/AIDS. The state-added and CDC optional modules included average hours worked, breast cancer screening, pre-diabetes, diabetes, diabetes assessment, actions to control high blood pressure, heart attack and stroke, tobacco related issues, chronic obstructive pulmonary disease, doctor advised smoking cessation, fruit and vegetable tax, arthritis management, anxiety and depression, depression treatment, inadequate sleep, tetanus diphtheria (adults and adolescent) , oral health, disability barrier to attend work or school, veterans' health, suicide, sexual violence, random child selection, childhood immunization, childhood diabetes, and childhood asthma.

2011 BRFSS survey also included questions on influenza related illness, an emerging health issues for adults and children during the months of January through April.

For more information about the Kansas BRFSS, including questionnaires and data results for 2011 and previous years, please visit: <http://www.kdheks.gov/brfss/index.html>



Summary of Leading Health Indicators

Healthy People 2020 is a comprehensive nationwide set of goals and objectives related to health promotion and disease prevention. In Healthy People 2020, a set of Leading Health Indicators were selected based on their relevance to broad public health topics and availability of data to measure their progress. They serve as a snapshot of the nation's progress towards improving overall health status of the population.

The 12 Leading Health Indicators are:

- Access to Health Services
- Clinical Preventive Services
- Environmental Quality
- Injury and Violence
- Maternal, Infant, and Child Health
- Mental Health
- Nutrition, Physical Activity, and Obesity
- Oral Health
- Reproductive and Sexual Health
- Social Determinants
- Substance Abuse
- Tobacco

This document contains data on seven of the Leading Health Indicators, which are measurable using Kansas Behavioral Risk Factor Surveillance (BRFSS).

For more information about Healthy People 2020, please visit

<http://www.healthypeople.gov/2020/default.aspx>

For information about Healthy Kansans 2020, please visit

<http://healthykansans2020.org/>

For more information about Leading Health Indicators, please visit

<http://www.healthypeople.gov/2020/LHI/default.aspx>

	Kansas Performance on the Health Indicators of Healthy People 2020 Measured by BRFSS	
	Kansas BRFSS 2011	Healthy People 2020 Goal
Access to Health Services		
Obj. Increase the proportion of persons with health insurance.	83.3%	100%
Obj. Increase the proportion of persons with a usual primary care provider.	80.3%	83.9%
Clinical Preventive Services		
Obj. Increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines.	NA*	70.5%
Obj. Reduce the proportion of adults with hypertension.	30.8%	26.9%
Obj. Persons aged 18 years and older with diabetes.**	9.5%	-
Injury and Violence		
Obj. Increase the use of safety belts.	80.6%	92.4%
Nutrition, Physical Activity, and Obesity		
Obj. Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity.	16.5%	20.1 %
Obj. Reduce the proportion of adults who are obese.	29.6%	30.6 %
Oral Health		
Obj. Persons aged 2 years and older who used the oral health care system in past 12 months.	NA*	24.3 %
Obj. Persons aged 18 years and older without dental insurance.***	36.3%	-
Substance Abuse		

Obj. Reduce the proportion of persons engaging in binge drinking during the past 30 days.	17.0%	24.3%
Tobacco		
Obj. Reduce cigarette smoking by adults.	22.0%	12.0%
Obj. Reduce use of smokeless tobacco products by adults.	5.3%	0.3%

*NA= Not asked in 2011 KS BRFSS

**= objective is not included in HP2020. The objective is included in Kansas Diabetes Control State Plan.

***= objective is not included in HP2020 document.

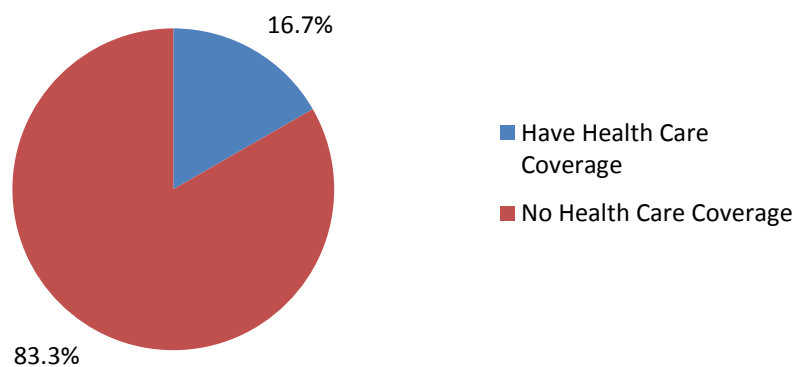
Access to Health Care-Health Insurance

Access to health services is one of leading health indicators of Healthy People 2020. The United States Institute of Medicine (IOM) defined access as the timely use of personal health services to achieve the best possible health outcomes. Lack of access to health services is a persistent barrier to good health ¹. Adults with no or limited insurance coverage are less likely to get needed medical attention ².

Overall, indicators of access to health care estimated by Kansas BRFSS are insurance coverage, medical cost, and having a personal health care provider.

- In 2011, an estimated 17% of adults 18 years and older had no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare.

Percentage of Adults With No Health Care Coverage



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Table 1. Percentage of adults 18 years and older who lack health care coverage by sociodemographic characteristics in Kansas, 2011 BRFSS

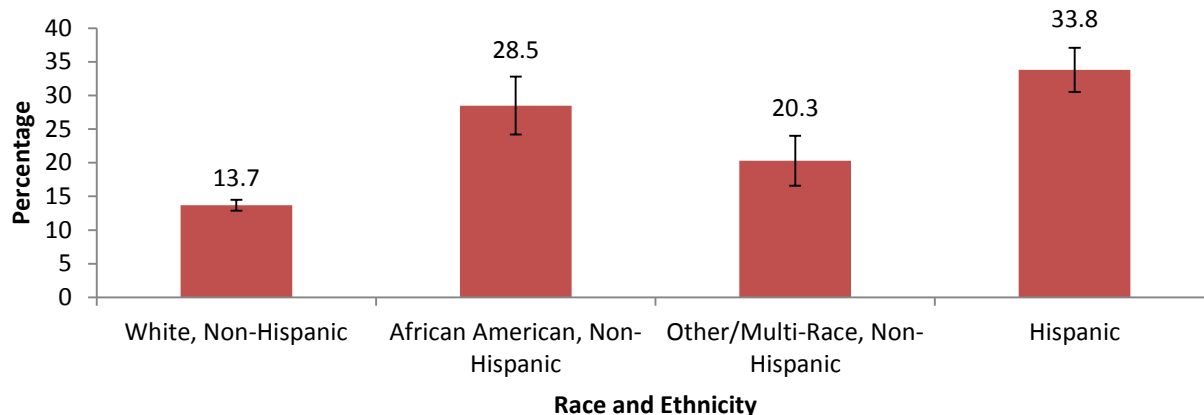
Sociodemographic Characteristics	Percentage of Adults 18 Years and Older Who Lack Health Care Coverage			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	2212	16.7	15.9	17.5
Age groups				
18 - 24 years	253	28.2	24.9	31.5
25 - 34 years	467	27.6	25.2	30.0
35 - 44 years	395	19.7	17.7	21.7
45 - 54 years	526	14.7	13.3	16.0
55 - 64 years	494	11.5	10.3	12.6
65 years and older	77	1.1	0.8	1.4
Gender				
Male	973	18.3	17.1	19.5
Female	1239	15.1	14.2	16.1
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	1603	13.7	12.9	14.5
African American, Non-Hispanic	170	28.5	24.2	32.7
Other/Multi-Race, Non-Hispanic	134	20.3	16.6	24.0
Hispanic	291	33.8	30.5	37.2
Annual Household Income				
Less than \$15,000	435	38.1	34.6	41.7
\$15,000 - \$24,999	725	36.1	33.7	38.6
\$25,000 - \$34,999	276	18.1	15.8	20.4
\$35,000 - \$49,999	253	13.5	11.6	15.4
\$50,000 or higher	169	3.2	2.6	3.8
Education				
Less than high school	334	36.9	33.4	40.4
High school graduate or G.E.D	814	20.5	19.0	22.1
Some college	681	14.8	13.5	16.1
College graduate	375	6.4	5.6	7.1
Employment Status				
Employed for wages or Self-employed	1196	15.9	14.9	16.8
Out of work	465	51.5	47.4	55.5
Homemaker or Student	285	21.6	18.8	24.4
Retired	127	2.2	1.7	2.6
Unable to work	130	13.6	10.9	16.2

Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

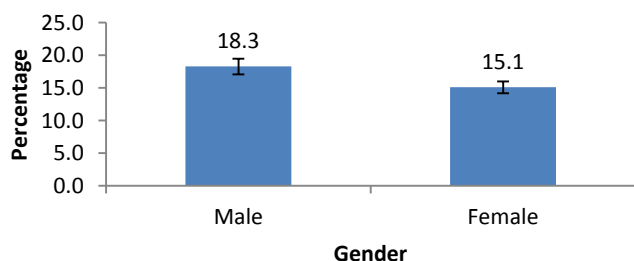
No Health Care Coverage by Specific Subpopulations

Percentage of Adults with Health Care Coverage by Race and Ethnicity (Age-Adjusted)



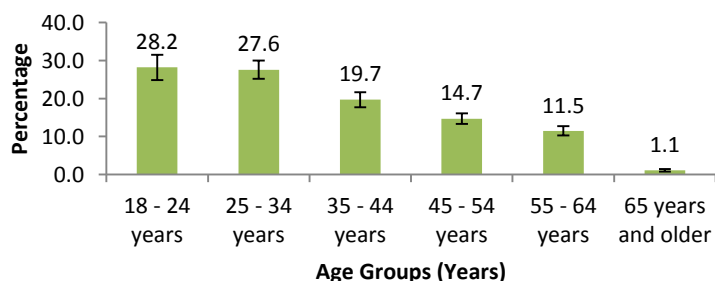
- Prevalence of obesity was significantly higher among Non-Hispanic African-Americans (41.9%, 95% CI: 37.2-46.7) as compared to Non-Hispanic Whites (29.0%, 95% CI: 28.1-29.9).

Percentage of Adults with No Health Care Coverage by Gender



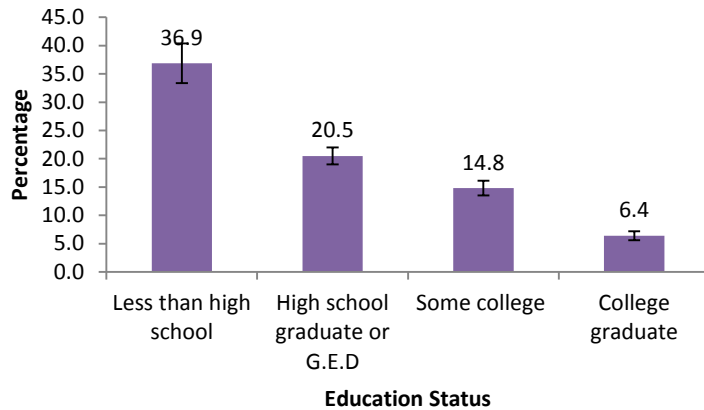
- Percentage of no health care coverage among males (18.3%, 95% CI: 17.1-19.5) was significantly higher than females (15.1%, 95% CI: 14.2-16.1).

Percentage of Adults with No Health Care Coverage by Age



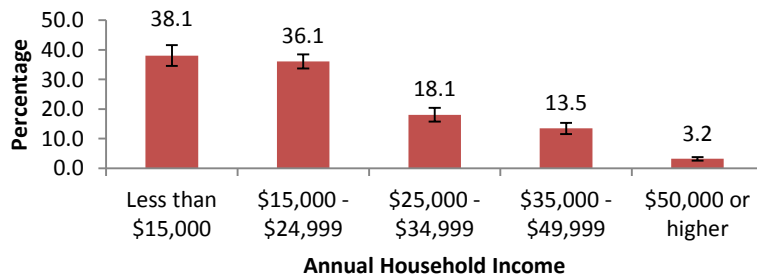
- Percentage of adults with no health care coverage significantly decreased with increase in age.
- The percentage of no health care coverage among adults aged 18-24 years was significantly lower than that of 25 years and older adults.

Percentage of Adults with No Health Care Coverage by Education Status



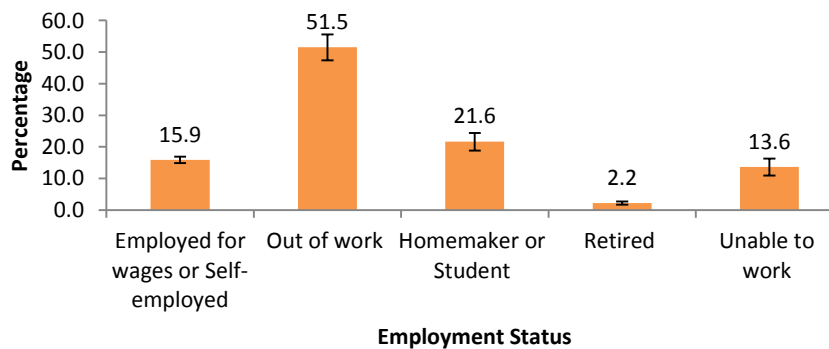
- Percentage of adults with no health care coverage significantly decreased with increase in the levels of education attainment.
- About 1 in 3 (36.9%, 95% CI: 33.4-40.4) adults with less than high school education did not have health care coverage as compared to more than 1 in 16 (6.4%, 95% CI: 5.6-7.1) with college or higher level education.

Percentage of Adults with No Health Care Coverage by Annual Household Income



- About 1 in 3 (38.1%, 95% CI: 34.6-41.7) adults with an annual income of less than \$15,000 did not have health care coverage as compared to more than 1 in 31 (3.2%, 95% CI: 2.6-3.8) with an annual income of \$50,000 or higher.

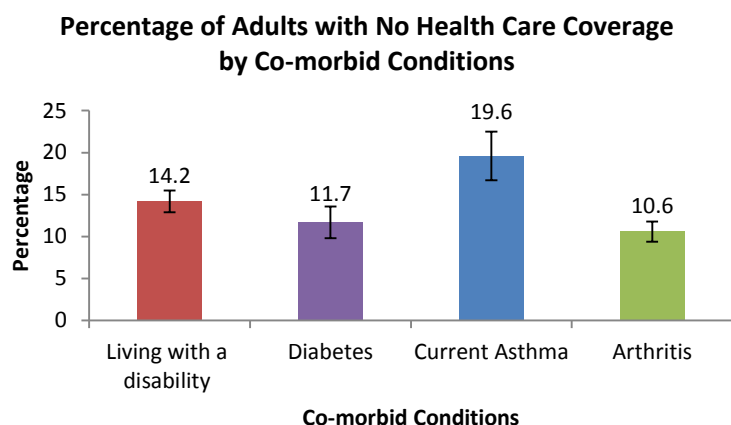
Percentage of Adults with No Health Care Coverage by Employment Status



- Percentage of adults with no health care coverage among those who were out of work (51.5%, 95% CI: 47.4-55.5) was significantly higher than adults who were employed for wages or self-employed (15.9%, 95% CI: 14.9-16.8)

Table 2. Percentage of adults 18 years and older who lack health care coverage by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of adults 18 years and older who lack health care coverage			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	564	14.2	12.9	15.5
Living without a disability	1568	17.3	16.4	18.3
Diabetes Status				
Yes	207	11.7	9.8	13.6
No	2001	17.2	16.4	18.0
Current Asthma Status				
Yes	216	19.6	16.7	22.5
No	1980	16.4	15.6	17.2
Arthritis Status				
Yes	451	10.6	9.4	11.7
No	1745	18.5	17.6	19.5



- About 1 in 5 adults with current asthma did not have health care coverage.
- About 14% of adults living with a disability did not have health care coverage.

- In the past 12 months, about 1 in 7 (14.3%) adults could not see a doctor when needed because of cost.

Summary

An estimated 17% of adults 18 years and older had no health care coverage (health insurance, prepaid plans such as HMOs or government plans such as Medicaid). A significantly higher percentage of males did not have health care coverage than females. A significantly higher percentage of Hispanics and

Non-Hispanic African-Americans did not have health care coverage as compared to Non-Hispanic White adults. Lower education and annual household income levels had significant influences on whether a person had health care coverage or not. The percentage of adults who had no health care coverage decreased with an increase in annual household income, a higher education level and age. A significantly higher percentage of adults with out of work status did not have health care coverage as compared to employed for wages or self-employed adults.

The Healthy People 2020 target for the access to health care objective was to increase the proportion of persons with health insurance to 100%. As 17% of adults in Kansas have no health insurance, further public health efforts are needed to reach the target in Kansas.

Access to Health Care-

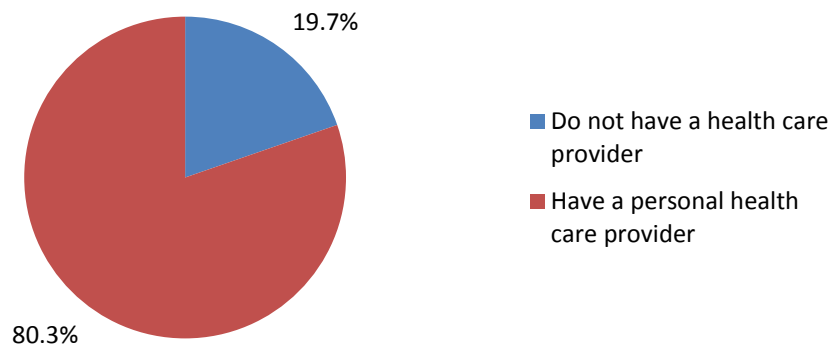
No Personal Health Care Provider

No Health Care Provider-A barrier for health care access: The 2011 Kansas BRFSS included a question to assess whether Kansas adults have one person that they thought of as their personal doctor or health care provider.

This indicator is a very important access to health care measure because access to primary health care and having a personal doctor has shown to substantially improve health-related outcomes. People who have a personal health care provider also indicate that they receive appropriate preventive care, have their problems identified and pay lower costs related to hospitalization due to timely diagnostic tests, fewer prescriptions and emergency room visits ³.

- About two in five (19.7%) adults did not have any one that they think of as their personal doctor or health care provider.
- More than 8 in 10 adults (80.3%) had one or more person(s) as their personal doctor or health care provider.

Percentage of Adults Who Have Do Not Have a Personal Health Care Provider



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

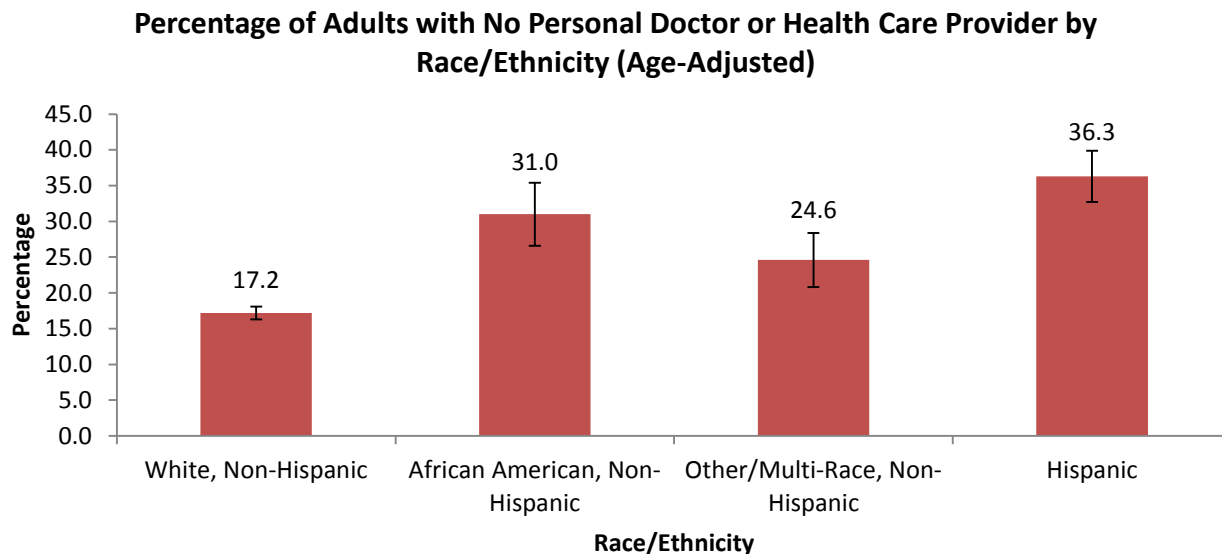
Table 1. Percentage of adults 18 years and older with no personal doctor by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Percentage of adults 18 years and older with no personal doctor			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	2606	19.7	18.9	20.6
Age groups				
18 - 24 years	356	37.6	34.1	41
25 - 34 years	621	35.0	32.5	37.4
35 - 44 years	437	20.8	18.8	22.8
45 - 54 years	515	14.7	13.3	16.1
55 - 64 years	380	8.9	7.9	9.9
65 years and older	297	4.7	4.1	5.3
Gender				
Male	1424	25.7	24.3	27.0
Female	1182	14.0	13.1	15.0
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	1964	17.2	16.3	18.0
African American, Non-Hispanic	175	31.0	26.6	35.3
Other/Multi-Race, Non-Hispanic	150	24.6	20.8	28.5
Hispanic	301	36.3	32.7	39.9
Annual Household Income				
Less than \$15,000	349	34.0	30.4	37.5
\$15,000 - \$24,999	594	31.1	28.6	33.5
\$25,000 - \$34,999	339	22.8	20.3	25.4
\$35,000 - \$49,999	325	16.6	14.6	18.6
\$50,000 or higher	590	10.7	9.7	11.7
Education				
Less than high school	325	36.2	32.6	39.7
High school graduate or G.E.D	818	21.5	20.0	23.1
Some college	777	18.4	17.0	19.8
College graduate	681	12.5	11.5	13.6
Employment Status				
Employed for wages or Self-employed	1634	21.8	20.7	22.9
Out of work	310	39.0	34.9	43.1
Homemaker or Student	297	23.0	20.2	25.9
Retired	269	4.4	3.8	5.0
Unable to work	89	10.3	7.7	12.8

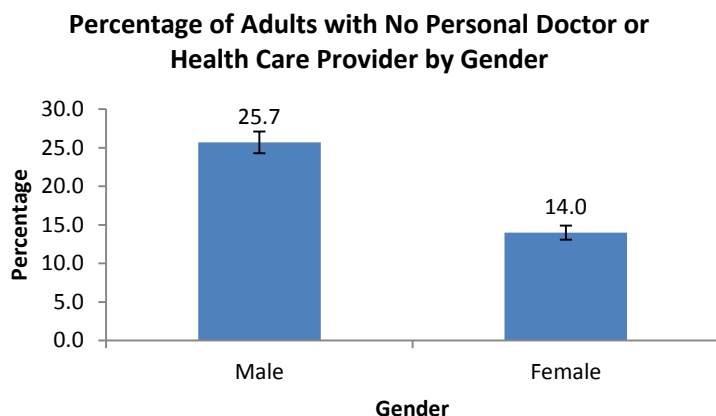
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

No Personal Doctor by Specific Subpopulations

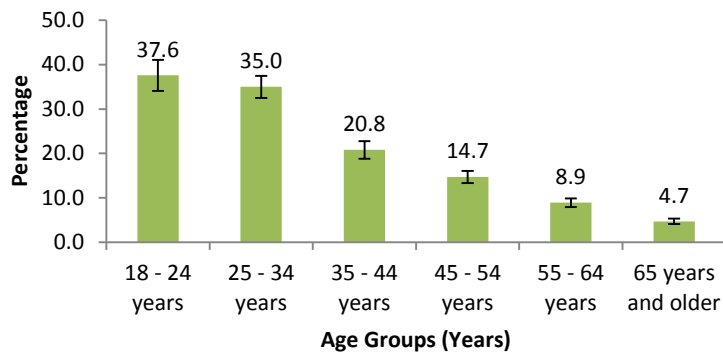


- A significantly higher percentage of Non-Hispanic African-American adults (31.0%, 95% CI 26.6-35.3) did not have a personal doctor or health care provider as compared to Non-Hispanic Whites (12.4%, 95% CI 11.2-13.7).
- Almost 1 in 3 Hispanic adults (36.3%) did not have a personal doctor or health care provider as compared to 1 in 5 Non-Hispanic White adults (17.2%).



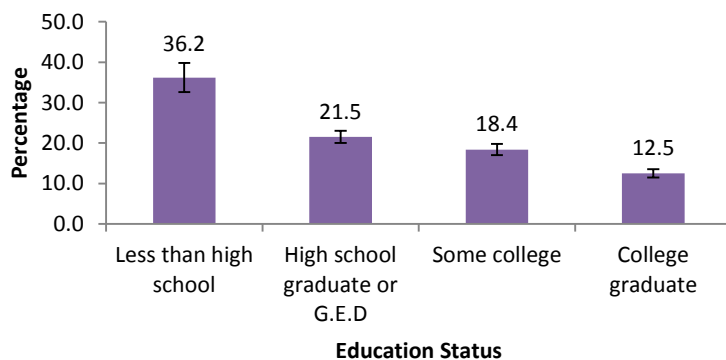
- A significantly higher percentage of males (25.7%, 95% CI: 24.3-27.0) did not have a personal doctor or health care provider as compared to females (14.0%, 95% CI: 13.1-14.0).

Percentage of Adults with No Personal Doctor or Health Care Provider by Age



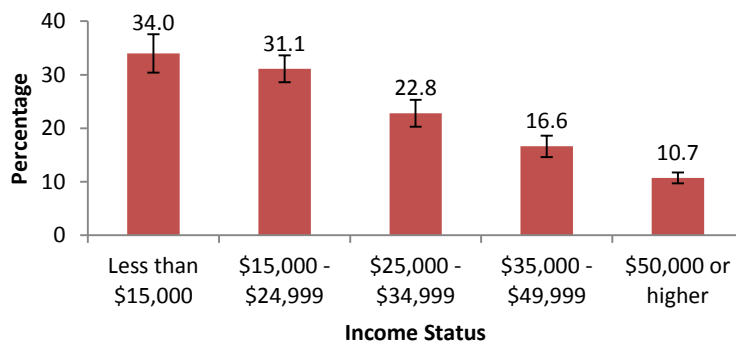
- About 1 in 3 adults among age groups 18-24 years, and 25-34 years did not have a personal doctor or health care provider.
- About 1 in 21 adults (4.7%) ages 65 years and older did not have a personal doctor or health care provider.
- Percentage of adults with no personal doctor or health care provider decreased with increase in age.

Percentage of Adults with No Personal Doctor or Health Care Provider by Education Status



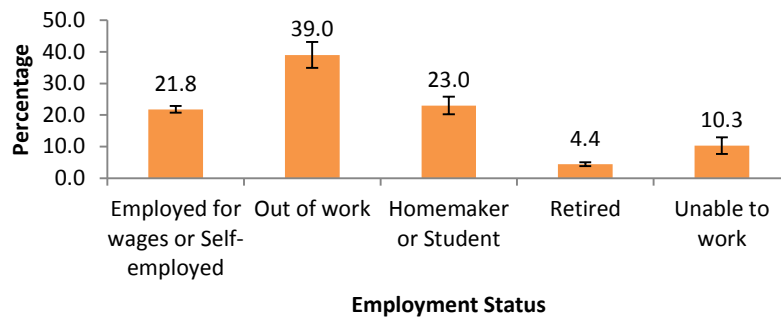
- About 1 in 3 adults with less than high school education (36.2%) did not have a personal doctor or health care provider.
- About 1 in 10 adults with college or higher level of education (12.5%) did not have a personal doctor or health care provider.

Percentage of Adults with No Personal Doctor or Health Care Provider by Income Status



- About 1 in 3 adults with annual household income less than \$15,000 (34.0%, 95% CI: 30.4-37.5) did not have a personal doctor or health care provider.
- About 1 in 10 adults with annual household income \$50,000 or more (10.7%, 95% CI: 9.7-11.7) did not have a personal doctor or health care provider.
- A significantly higher percentage of those with a lower annual household income did not have a personal doctor.

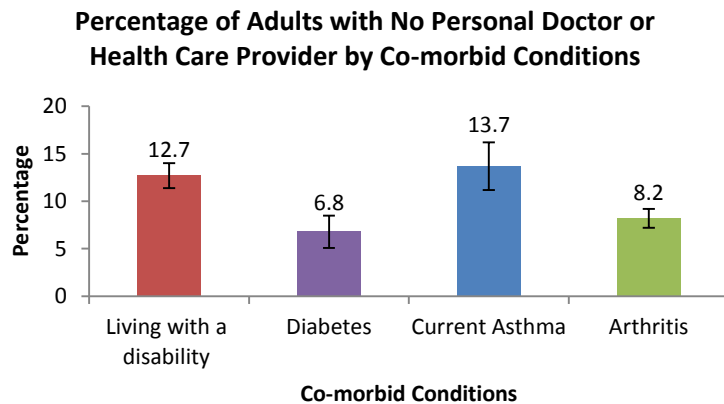
Percentage of Adults with No Personal Doctor or Health Care Provider by Employment Status



■ About 1 in 3 adults (39.0%) among those that were out of work did not have a personal doctor or health care provider as compared to about 1 in 4 adults (21.8%) among those that were employed for wages or self-employed.

Table 2. Percentage of adults 18 years and older with no personal doctor by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of Adults 18 Years and Older with No Personal Doctor			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	488	12.7	11.4	14.1
Living without a disability	2023	21.8	20.8	22.8
Diabetes Status				
Yes	112	6.8	5.1	8.4
No	2491	21.1	20.2	22.0
Current Asthma Status				
Yes	157	13.7	11.2	16.2
No	2432	20.3	19.4	21.1
Arthritis Status				
Yes	356	8.2	7.2	9.3
No	2237	23.2	22.2	24.2



- About 14% adults with current asthma did not have a personal doctor or health care provider.
- About 13% of adults living with a disability did not have a personal doctor or health care provider.

Summary

Not having a personal doctor or a health care professional is a barrier to access to health care. About 1 in 5 adults did not have anyone that they thought of as a personal doctor or health care provider. A significantly higher percentage of males, young adults, adults with lower annual household income and education did not have a personal doctor or health care professional. The percentage of adults with no personal doctor or health care provider was significantly higher among adults who were out of work as compared to adults that were self-employed or employed for wages.

One of the Healthy People 2020 objective is to increase the proportion of persons who have a specific source of ongoing primary care to 96%. As 19.7% of adults in Kansas do not have a personal health care provider, further public health efforts are needed to reach HP2020 target in Kansas.

Obesity

Leading Health Indicator

Obesity

2011 Kansas BRFSS

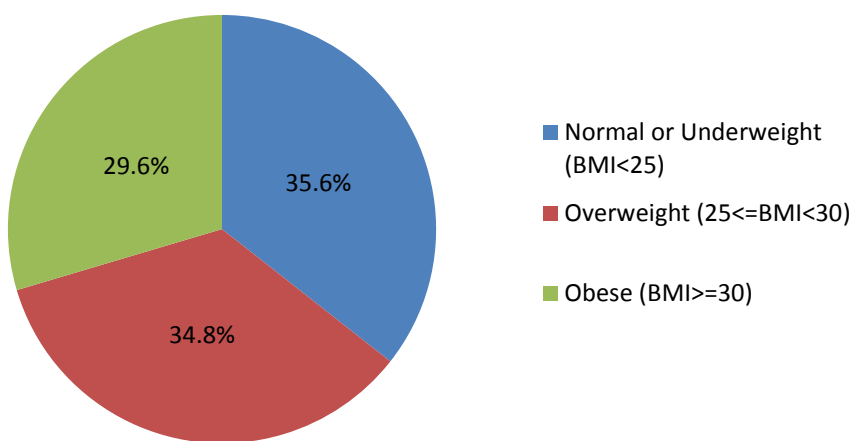
Population assessment of obesity is done by calculating Body Mass Index (BMI). Categories of BMI indicate ranges of body weight.⁴ Obesity has physical, psychological, and social consequences in adults.⁵ Health risks of obesity includes coronary heart disease, stroke, hypertension, dyslipidemia, arthritis and type-2 diabetes.^{5,6} Apart from physical ailments, people suffering from obesity also face psychological problems including depression, appearance consciousness, and lack of self confidence.⁷

BMI Categories

- **Normal/Underweight:** BMI less than 25 kg/m²
- **Overweight:** BMI 25 kg/m² to 29.9 kg/m²
- **Obese:** BMI equal to or more than 30 kg/m²

The Kansas BRFSS survey included questions about respondents' height and weight; categories of weight status were calculated for each respondent. In 2011, 29.6% (95% C.I: 28.7-30.4) of Kansas adults 18 years and older were obese.

**Prevalence of normal weight, overweight and obesity among adults
18 years and older, Kansas 2011**



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Table 1. Prevalence of obesity among adults aged 18 years and older by sociodemographic characteristics in Kansas, 2011 BRFSS

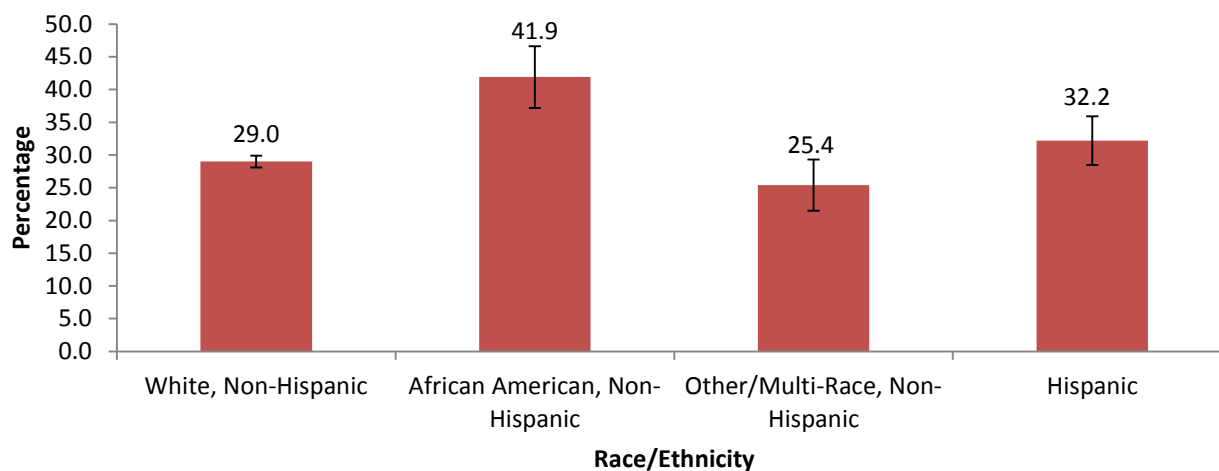
Sociodemographic Characteristics	Obesity among adults 18 years and older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	5907	29.6	28.7	30.4
Age groups				
18 - 24 years	150	16.1	13.4	18.7
25 - 34 years	528	28.8	26.4	31.2
35 - 44 years	753	32.9	30.7	35.2
45 - 54 years	1292	34.8	33.0	36.6
55 - 64 years	1546	36.0	34.3	37.6
65 years and older	1638	26.3	25.0	27.6
Gender				
Male	2464	30.0	28.8	31.3
Female	3443	29.1	28.0	30.1
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	5103	29.0	28.1	29.9
African American, Non-Hispanic	323	41.9	37.2	46.7
Other/Multi-Race, Non-Hispanic	207	25.4	21.5	29.3
Hispanic	265	32.2	28.5	35.9
Annual Household Income				
Less than \$15,000	594	35.8	32.5	39.2
\$15,000 - \$24,999	974	31.8	29.5	34.0
\$25,000 - \$34,999	709	30.9	28.4	33.3
\$35,000 - \$49,999	928	32.7	30.5	34.8
\$50,000 or higher	2056	27.8	26.5	29.0
Education				
Less than high school	419	30.6	27.3	33.9
High school graduate or G.E.D	1791	31.5	30.0	33.1
Some college	1885	31.3	29.8	32.8
College graduate	1807	24.9	23.6	26.1
Employment Status				
Employed for wages or Self-employed	3128	29.9	28.8	31.0
Out of work	339	34.7	30.7	38.7
Homemaker or Student	361	20.0	17.5	22.4
Retired	1529	27.5	26.1	28.8
Unable to work	544	46.7	42.8	50.6

Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

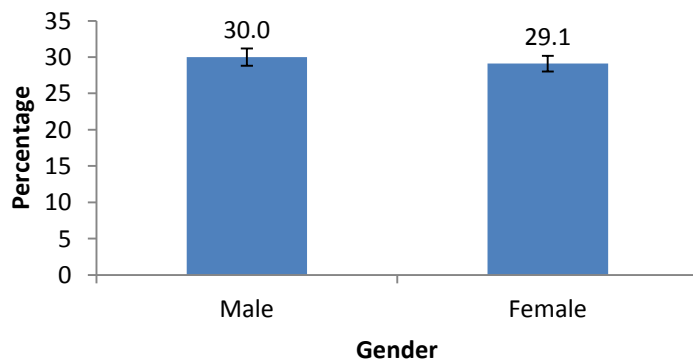
Obesity by Specific Subpopulations

Prevalence of Obesity by Race/Ethnicity (Age- Adjusted)



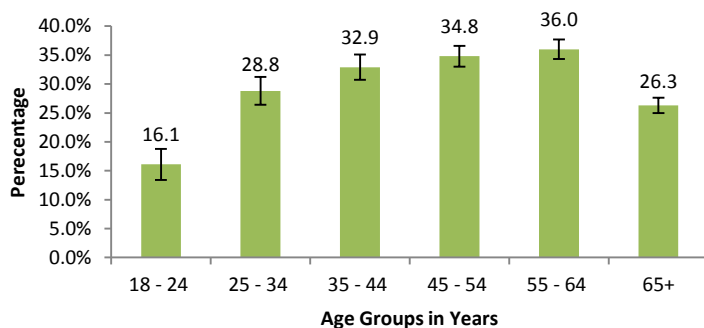
- Prevalence of obesity was significantly higher among Non-Hispanic African-Americans (41.9%, 95% CI: 37.2-46.7) as compared to Non-Hispanic White (29.0%, 95% CI: 28.1-29.9).

Prevalence of Obesity by Gender



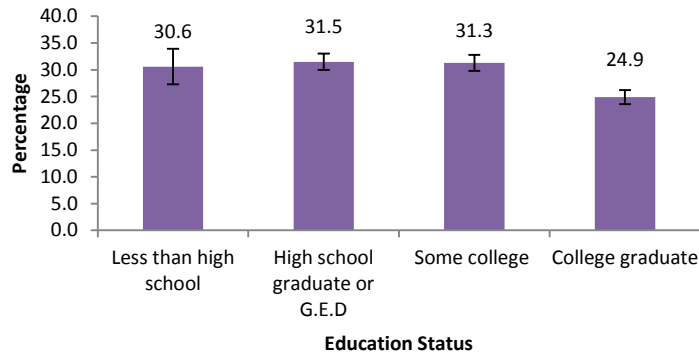
- About, 30.0% (95% CI: 28.8-31.3) of males and 29.1% (95% CI: 28.0-30.1) of females were obese.

Prevalence of Obesity by Age Groups



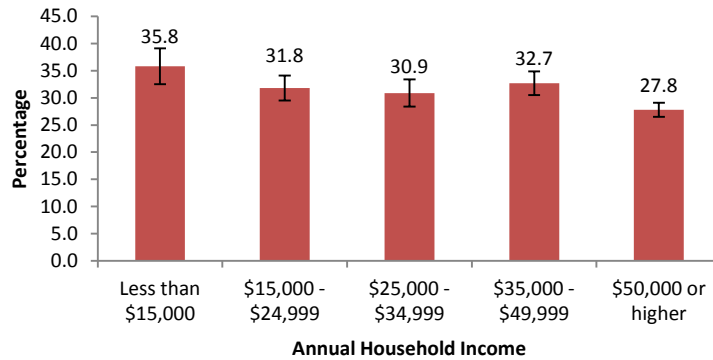
- About 1 in 3 adults among age groups 35-44 years, 45-54 years and 55-64 years were obese.
- 1 in 4 adults (26.3%) ages 65 years and older was obese.

Prevalence of Obesity by Education Status



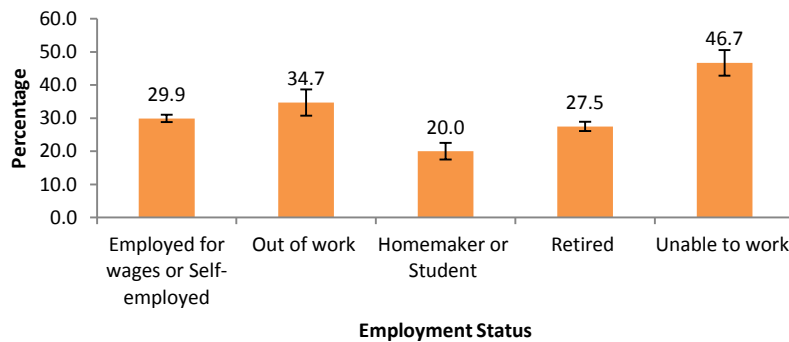
■ Adults with less than college graduation had a significantly higher prevalence of obesity as compared to adults with a college graduation.

Prevalence of Obesity by Annual Household Income



■ Adults with an annual household income of \$50,000 or more had significantly lower prevalence of obesity as compared to other income status categories.

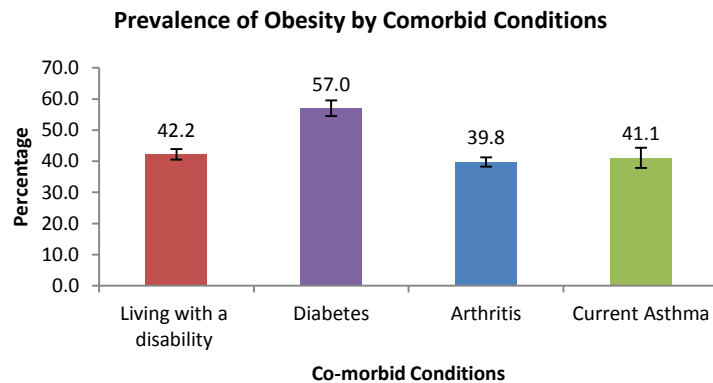
Prevalence of Obesity by Employment Status



■ About 1 in 2 adults (46.7%) among those that were unable to work were obese as compared to about 1 in 3 adults (29.9%) among those that were employed for wages or self-employed.

Table 2. Prevalence of obesity among adults aged 18 years and older by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Obesity Among Adults 18 Years and Older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	2380	42.2	40.5	43.9
Living without a disability	3404	25.6	24.7	26.6
Diabetes				
Yes	1332	57	54.5	59.4
No	4566	26.6	25.8	27.5
Current Asthma				
Yes	704	41.1	37.9	44.3
No	5168	28.5	27.6	29.4
Arthritis				
Yes	2384	39.8	38.3	41.4
No	3487	26.4	25.5	27.4



- About half of the adults with diabetes (57.0%) were obese.
- About 2 in 5 adults living with disability, current asthma or arthritis were obese.
- Obesity is highly prevalent among adults with chronic conditions.

Summary

In 2011, about one-third of the population was obese. Although high prevalence of obesity was observed among most of the population subgroups, it was significantly higher among Non-Hispanic African-Americans. Adults whose annual household income was less than \$50,000 and adults who had other chronic conditions such as diabetes, arthritis, current asthma or living with a disability also had

high prevalence of obesity. Adults who are unable to work had higher prevalence of obesity as compared to adults who are employed.

The Healthy People 2020 target for the obesity objective is to reduce the proportion of adults who are obese to 30.6%. Though the Kansas estimate of 29.6% is close to the HP 2020 target, public health efforts are still needed to further reduce the percentage of Kansans who are obese.

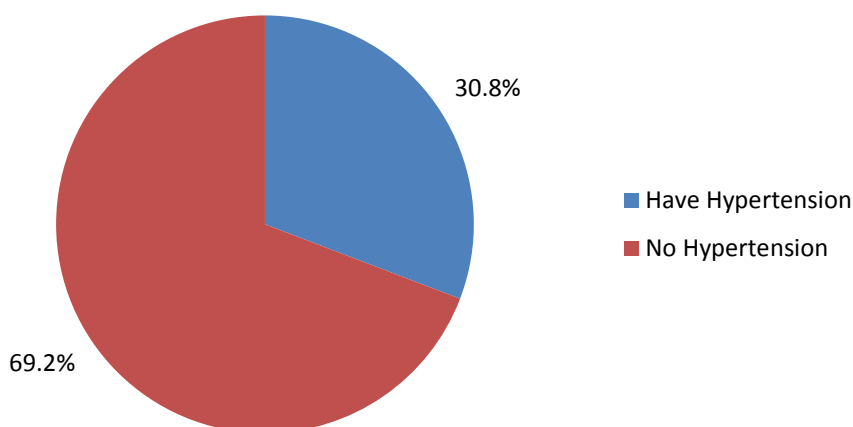
Hypertension

Health Indicator
Hypertension
2011 Kansas BRFSS

One of the leading modifiable (controllable) risk factors for heart disease and stroke is hypertension ⁸. Moreover, adults with hypertension are at higher risk for heart disease, stroke, congestive heart failure and end-stage renal disease ⁹. One of the objectives of Healthy People 2020 is to reduce the proportion of adults with hypertension. High blood pressure affects approximately one in three adults in the United States, and more than half of Americans with high blood pressure do not have it under control ¹⁰.

In 2011, 30.8% (95% C.I: 30.1-31.6) of Kansas adults 18 years and older had hypertension (high blood pressure)

Percentage of Adults with Hypertension



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

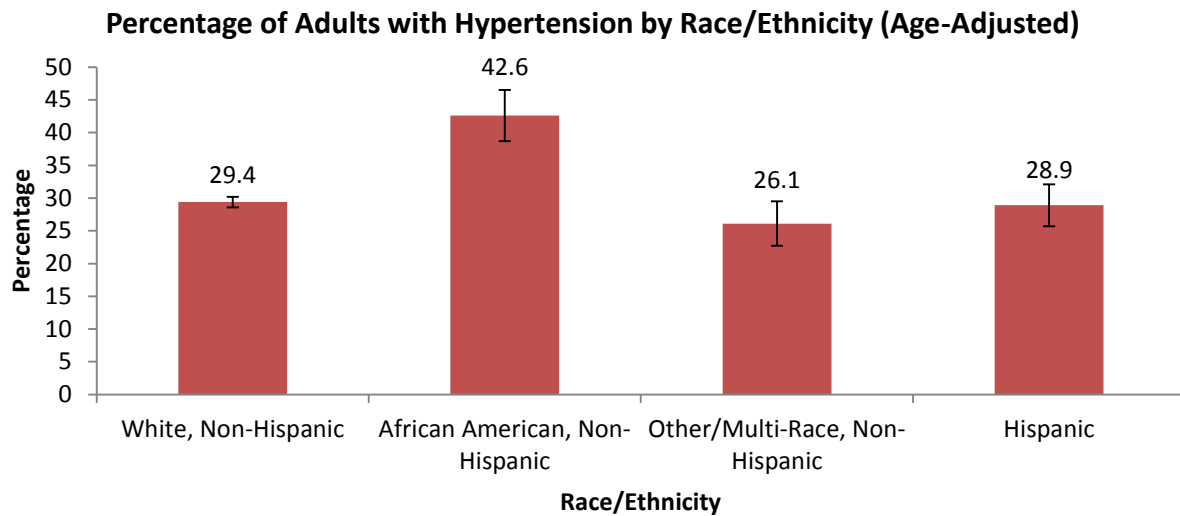
Table 1. Percentage of adults 18 years and older with hypertension by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Percentage of Adults 18 Years and Older with Hypertension			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	8234	30.8	30.1	31.6
Age groups				
18 - 24 years	56	5.9	4.2	7.6
25 - 34 years	231	12.5	10.8	14.2
35 - 44 years	507	21.7	19.8	23.6
45 - 54 years	1250	32.4	30.7	34.2
55 - 64 years	2164	47.8	46.2	49.5
65 years and older	4026	60.3	59.0	61.7
Gender				
Male	3226	31.6	30.4	32.9
Female	5008	30.0	29.1	31.0
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	7272	29.4	28.6	30.2
African American, Non-Hispanic	424	42.6	38.7	46.5
Other/Multi-Race, Non-Hispanic	244	26.1	22.7	29.6
Hispanic	265	28.9	25.7	32.2
Annual Household Income				
Less than \$15,000	833	36.6	33.5	39.8
\$15,000 - \$24,999	1477	34.0	31.9	36.1
\$25,000 - \$34,999	1052	35.7	33.3	38.1
\$35,000 - \$49,999	1225	34.2	32.1	36.3
\$50,000 or higher	2414	26.4	25.3	27.6
Education				
Less than high school	645	34.0	30.9	37.0
High school graduate or G.E.D	2651	34.1	32.6	35.6
Some college	2499	30.8	29.4	32.2
College graduate	2432	26.0	24.9	27.1
Employment Status				
Employed for wages or Self-employed	3107	24.1	23.1	25.0
Out of work	358	28.0	24.7	31.4
Homemaker or Student	441	16.1	14.1	18.1
Retired	3605	59.2	57.8	60.7
Unable to work	712	55.0	51.2	58.8

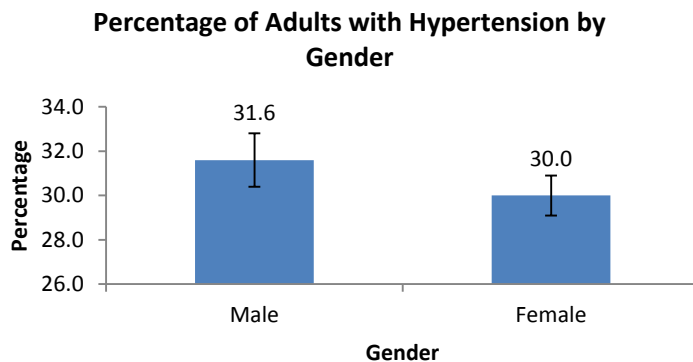
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

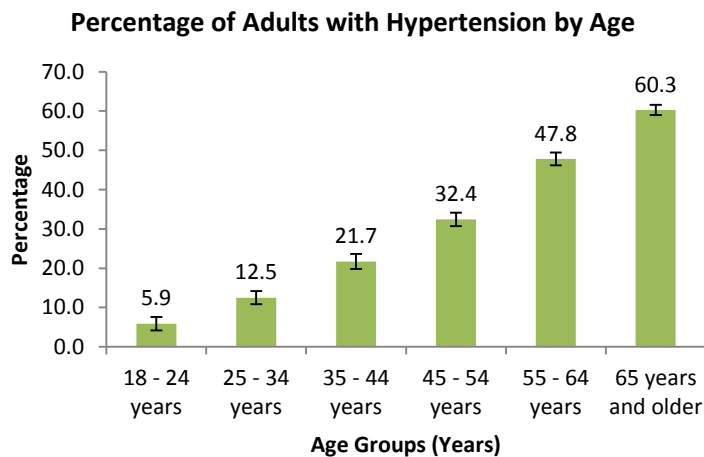
Hypertension by Specific Subpopulations



- Prevalence of hypertension was significantly higher among Non-Hispanic African-Americans, (42.6%, 95% CI: 38.7-46.5) as compared to Non-Hispanic White (29.4%, 95% CI: 28.6-30.2).

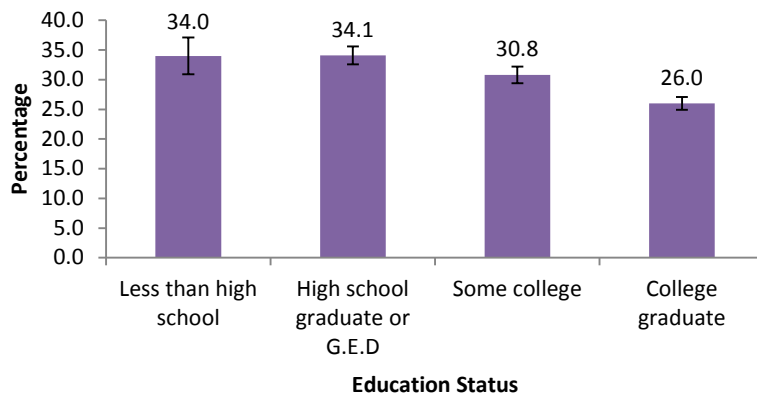


- About one in three males and females had hypertension.



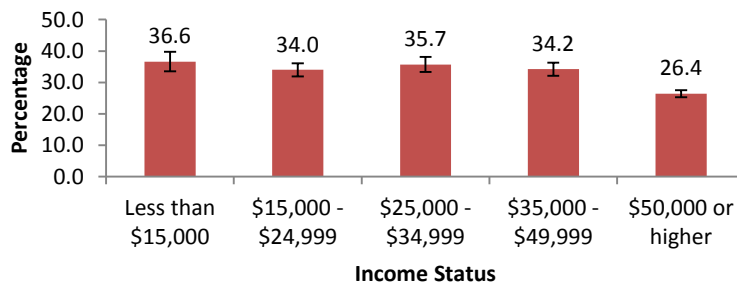
- About 6 in 10 adults (60.3%) ages 65 years and older had hypertension.
- About 6% of adults 18-24 years had hypertension.
- Prevalence of Hypertension among adults statistically increased with increasing age.

Percentage of Adults with Hypertension by Education Status



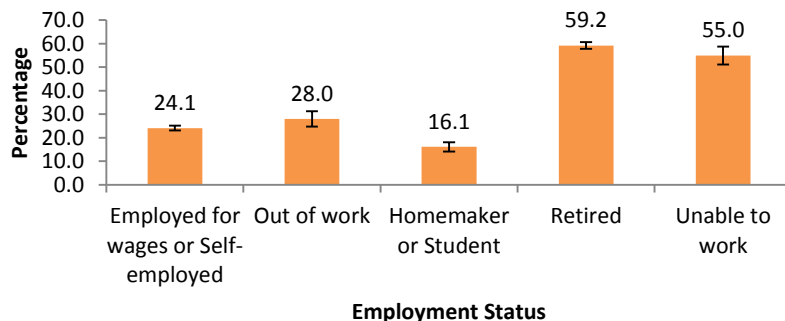
- Adults with less than college graduation had significantly higher prevalence of hypertension as compared to adults with some college degree or with a college graduation.

Percentage of Adults with Hypertension by Income Status



- Adults with an annual household income of \$50,000 or more had significantly lower prevalence of hypertension as compared to other income status categories.

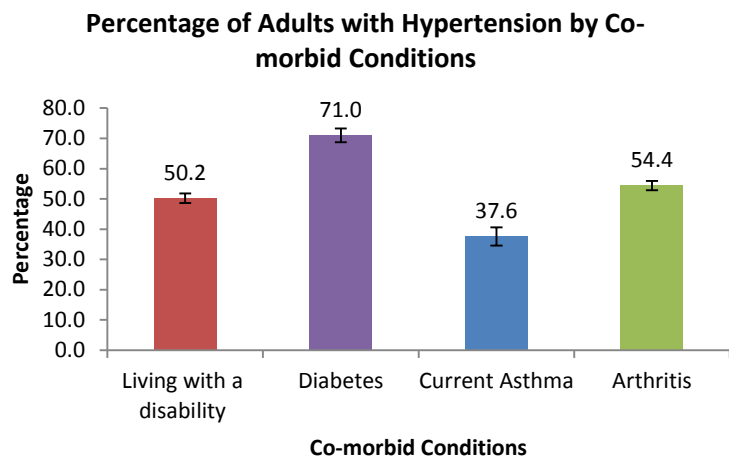
Percentage of Adults with Hypertension by Employment Status



- About 1 in 2 adults (55.0%) among those that were unable to work had hypertension as compared to about 1 in 4 adults (24.1%) among those that were employed for wages or self-employed.

Table 2. Percentage of adults 18 years and older with hypertension by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of adults 18 years and older with hypertension			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	3486	50.2	48.6	51.9
Living without a disability	4561	24.8	24.0	25.7
Diabetes Status				
Yes	1905	71.0	68.7	73.2
No	6320	26.6	25.8	27.4
Current Asthma Status				
Yes	825	37.6	34.6	40.5
No	7354	30.2	29.4	31.0
Arthritis Status				
Yes	3771	54.4	52.9	56.0
No	4399	23.7	22.9	24.5



- About half of the adults with arthritis (54.4%) had hypertension.
- About 71% of the adults with diabetes had hypertension.
- About 1 in 3 adults with current asthma had hypertension.
- About half of the adults living with a disability (50.2%) had hypertension.
- Hypertension was highly prevalent among adults with chronic conditions.

Summary

In 2011, about one in three (30.8%) adults 18 years and older had hypertension. A higher prevalence of hypertension was seen among Non-Hispanic African Americans. Prevalence of hypertension was statistically higher among older adults, adults with less than college graduation and with lower income. Adults who are unable to work had higher prevalence of hypertension as compared to those that were employed for wages or self-employed. Hypertension is highly prevalent among adults with chronic conditions such as diabetes, arthritis and adults living with a disability.

The Healthy People 2020 target for the hypertension objective is to reduce the proportion of adults with hypertension to 26.9%. As 30.8% of adults in Kansas have hypertension, further public health efforts are needed to reach the target in Kansas.

Diabetes

Health Indicator
Diabetes
2011 Kansas BRFSS

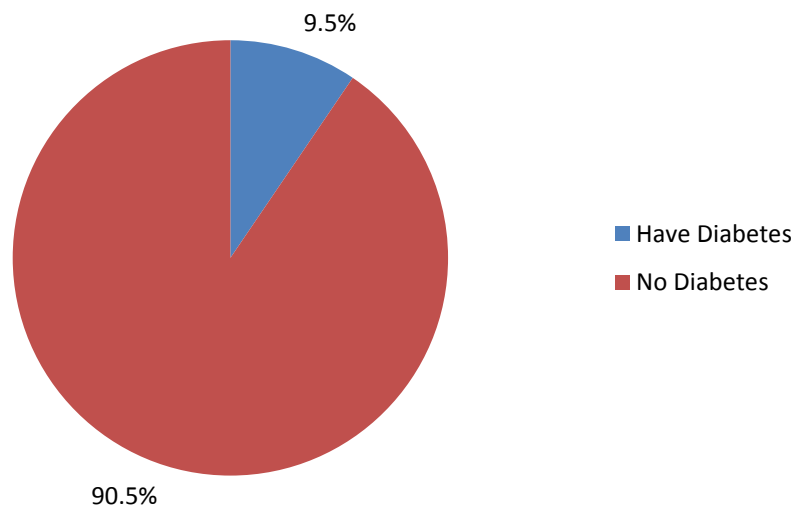
Diabetes is the leading cause of kidney failure, non-traumatic lower limb amputations, and new cases of blindness among adults in the United States. Diabetes is a major cause of heart disease and stroke. Diabetes is the seventh leading cause of death in the United States.¹¹

Risk factors for type 2 diabetes include obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance and physical inactivity¹².

The Healthy people 2020 goal for diabetes is to reduce the disease and economic burden of Diabetes Mellitus and improve the quality of life for all persons who have, or at risk for diabetes mellitus¹³.

In 2011, 9.5% (95% C.I: 9.1-10.0) of Kansas adults 18 years and older had diabetes.

Percentage of Adults With Diabetes



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Table 1. Percentage of adults 18 years and older with diabetes by sociodemographic characteristics in Kansas, 2011 BRFSS

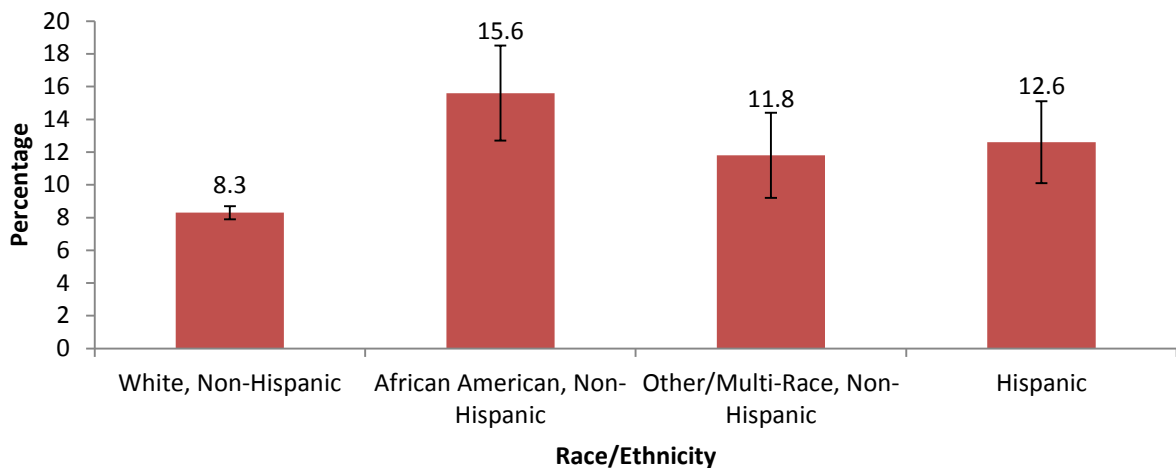
Sociodemographic Characteristics	Percentage of Adults 18 Years and Older with Diabetes			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	2584	9.5	9.1	10.0
Age groups				
18 - 24 years	12	1.1	0.4	1.8
25 - 34 years	42	2.1	1.4	2.8
35 - 44 years	117	5.3	4.2	6.4
45 - 54 years	378	9.8	8.7	10.9
55 - 64 years	745	17.0	15.7	18.3
65 years and older	1290	20.4	19.2	21.5
Gender				
Male	1098	10.0	9.3	10.7
Female	1486	9.1	8.5	9.6
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	2190	8.3	7.9	8.7
African American, Non-Hispanic	164	15.6	12.7	18.6
Other/Multi-Race, Non-Hispanic	107	11.8	9.2	14.3
Hispanic	118	12.6	10.1	15.1
Annual Household Income				
Less than \$15,000	311	13.2	11.2	15.2
\$15,000 - \$24,999	532	12.8	11.4	14.2
\$25,000 - \$34,999	335	12.0	10.5	13.6
\$35,000 - \$49,999	390	11.0	9.7	12.2
\$50,000 or higher	639	6.6	6.0	7.2
Education				
Less than high school	248	12.3	10.3	14.2
High school graduate or G.E.D	876	11.4	10.5	12.3
Some college	808	9.2	8.5	10.0
College graduate	650	6.7	6.1	7.3
Employment Status				
Employed for wages or Self-employed	784	6.0	5.5	6.5
Out of work	129	8.8	6.8	10.7
Homemaker or Student	119	4.0	3.1	4.9
Retired	1179	20.5	19.3	21.7
Unable to work	367	27.9	24.7	31.1

Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

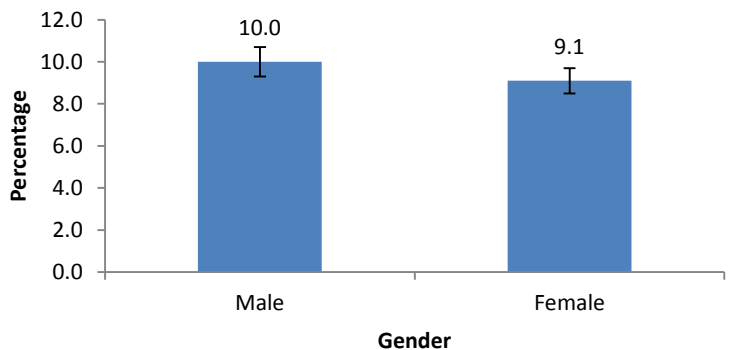
Diabetes by Specific Subpopulations

Percentage of Adults with Diabetes by Race/Ethnicity (Age-Adjusted)



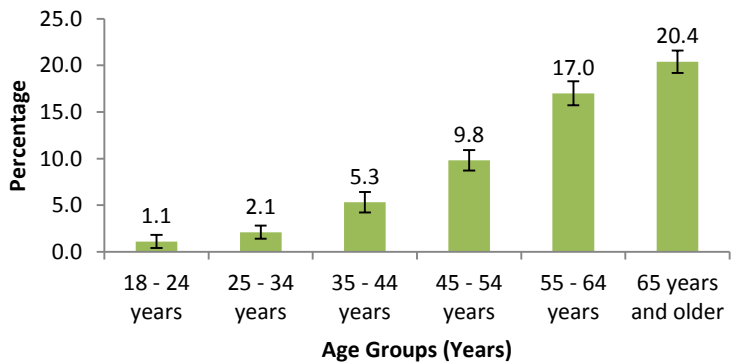
- Prevalence of diabetes was significantly higher among Non-Hispanic African-Americans (15.6%, 95% CI: 12.7-18.6) as compared to Non-Hispanic White (8.3%, 95% CI: 7.9-8.7).

Percentage of Adults with Diabetes by Gender



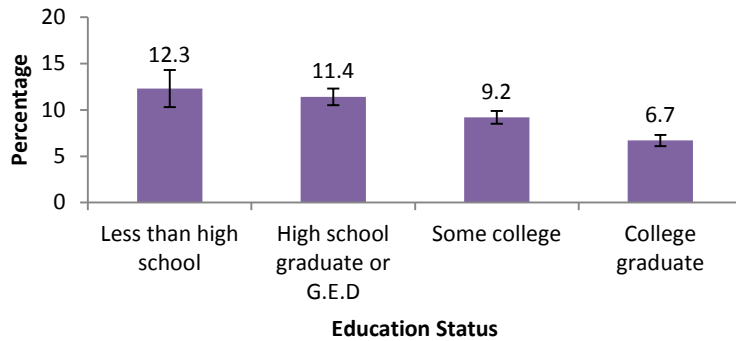
- About, 10.0% (95% CI: 9.3-10.7) of males and 9.1% (95% CI: 8.5-9.6) of females had diabetes.

Percentage of Adults with Diabetes by Age



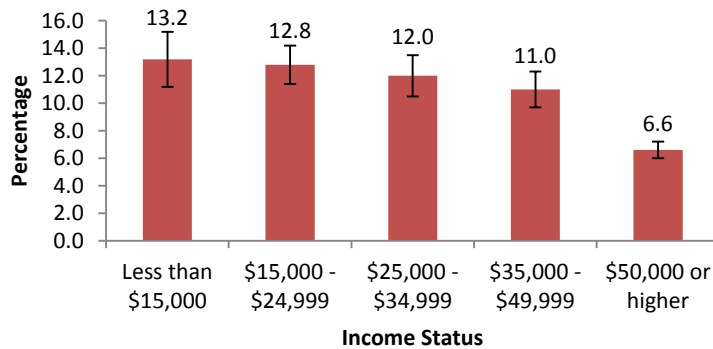
- The prevalence of diabetes increased with age.
- About 1 in 5 adults (20.4%) among age groups 65 years and older had diabetes.

Percentage of Adults with Diabetes by Education Status



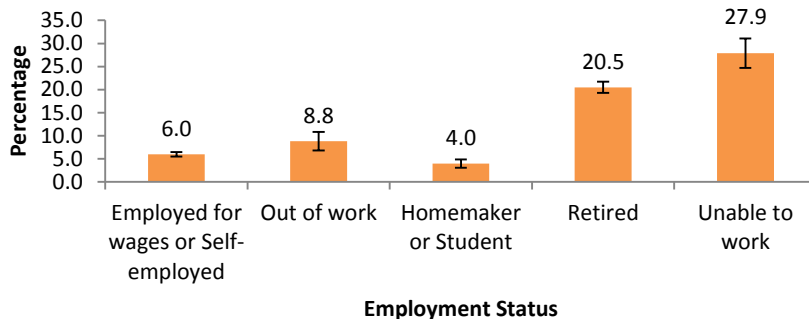
■ Adults with less than college graduation had significantly higher prevalence of diabetes as compared to adults with some college degree and with a college graduation.

Percentage of Adults with Diabetes by Income Status



■ Adults with an annual household income of \$50,000 or more had significantly lower prevalence of diabetes as compared to other income status categories.

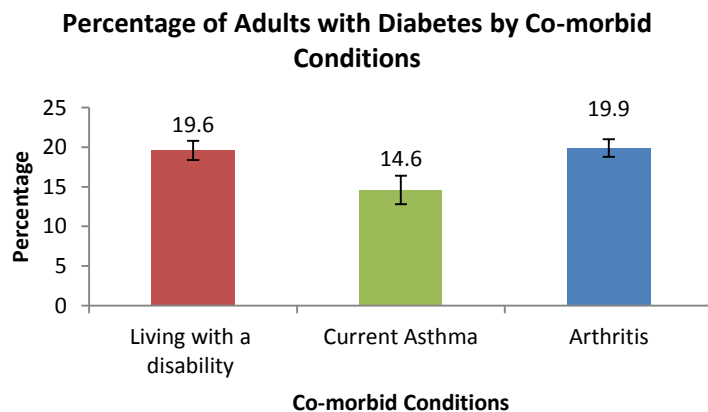
Percentage of Adults with Diabetes by Employment Status



■ About 1 in 3 adults (27.9%) among those that were unable to work had diabetes as compared to about 1 in 17 adults (6.0%) among those that were employed for wages or self-employed.

Table 2. Percentage of adults 18 years and older with diabetes by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of Adults 18 Years and Older with Diabetes			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	1372	19.6	18.4	20.8
Living without a disability	1155	6.3	5.9	6.8
Current Asthma Status				
Yes	334	14.6	12.8	16.5
No	2232	9.0	8.6	9.5
Arthritis Status				
Yes	1333	19.9	18.8	21.1
No	1227	6.3	5.9	6.8



- About 15% of the adults with current asthma had diabetes.
- About 1 in 5 adults living with a disability, or arthritis had diabetes.

Summary

About one in ten (9.5%) Kansas adults in the population had diabetes in 2011. Prevalence of diabetes increased with age, with 1 in 5 adults among age groups 65 years and older having diabetes. Prevalence of diabetes was significantly higher among Non-Hispanic African-Americans. Adults with annual household income less than \$50,000 and adults with other chronic conditions such as arthritis, current asthma or living with a disability also had high prevalence of diabetes. Adults who were unable to work, retired or out of work had higher prevalence of diabetes as compared to adults who were employed.

Seatbelt Use

Leading Health Indicator

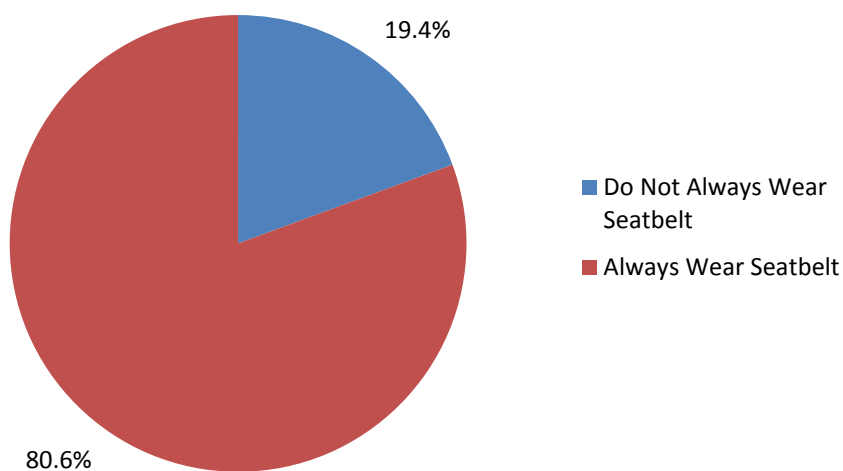
Seatbelt Use

2011 Kansas BRFSS

Motor vehicle accidents are the leading cause of death for people age 5 – 34. It can lead to premature death, disability, poor mental health, high medical cost and lost productivity¹⁴. The most effective way to reduce injuries and mortality due to accidents is the use of seat belts.¹⁵ Increasing use of safety belts is one of the objectives for the prevention of unintentional injury. The Healthy People 2020 goal for injury prevention is to prevent unintentional injuries, and reduce their consequences.¹⁴

In 2011, 19.4% (95% C.I: 18.6-20.1) of Kansas adults 18 years and older did not always wear a seatbelt when they drive or ride in a car.

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Do Not Always Wear a Seatbelt



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

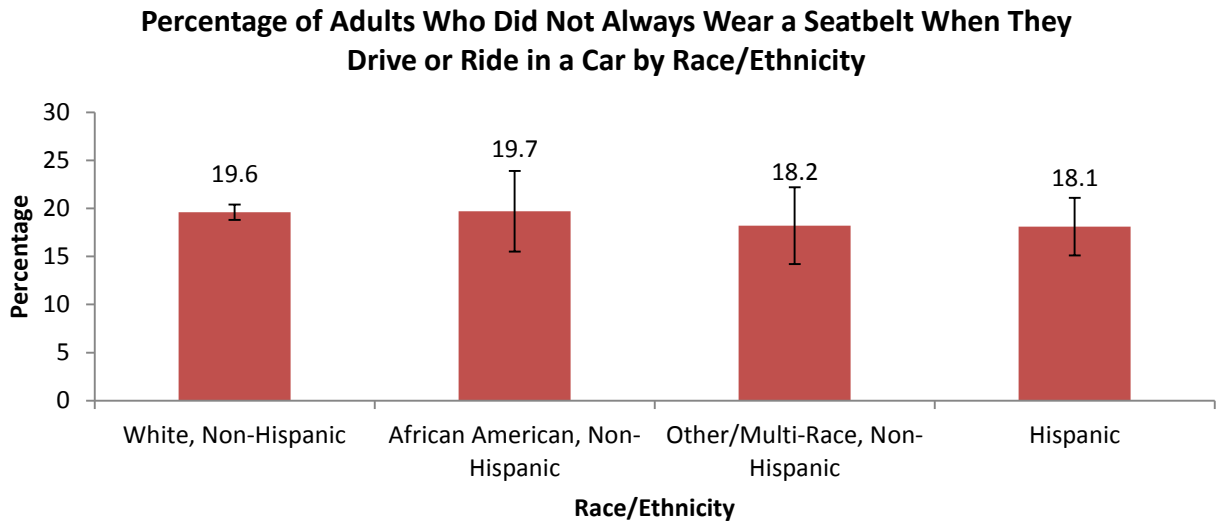
Table 1. Percentage of adults 18 years and older who did not always wear a seatbelt when they drive or ride in a car by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Percentage of adults 18 years and older who did not always wear a seatbelt when they drive or ride in a car			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	3339	19.4	18.6	20.1
Age groups				
18 - 24 years	243	27.1	23.8	30.3
25 - 34 years	416	22.5	20.4	24.7
35 - 44 years	409	19.0	17.1	20.9
45 - 54 years	620	16.3	14.9	17.6
55 - 64 years	736	18.0	16.6	19.3
65 years and older	915	15.1	14.1	16.2
Gender				
Male	1858	25.5	24.3	26.8
Female	1481	13.4	12.6	14.3
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	2928	19.6	18.8	20.5
African American, Non-Hispanic	122	19.7	15.5	23.9
Other/Multi-Race, Non-Hispanic	120	18.2	14.2	22.2
Hispanic	157	18.1	15.1	21.2
Annual Household Income				
Less than \$15,000	321	20.7	17.9	23.5
\$15,000 - \$24,999	541	20.5	18.5	22.6
\$25,000 - \$34,999	417	20.6	18.3	22.8
\$35,000 - \$49,999	493	20.8	18.7	22.8
\$50,000 or higher	1144	17.2	16.1	18.3
Education				
Less than high school	265	24.0	20.9	27.2
High school graduate or G.E.D	1111	22.0	20.5	23.4
Some college	1044	20.1	18.7	21.5
College graduate	915	13.6	12.6	14.6
Employment Status				
Employed for wages or Self-employed	1941	21.1	20.1	22.1
Out of work	202	23.6	19.9	27.3
Homemaker or Student	201	15.6	13.1	18.1
Retired	769	13.6	12.6	14.6
Unable to work	219	19.8	16.5	23.1

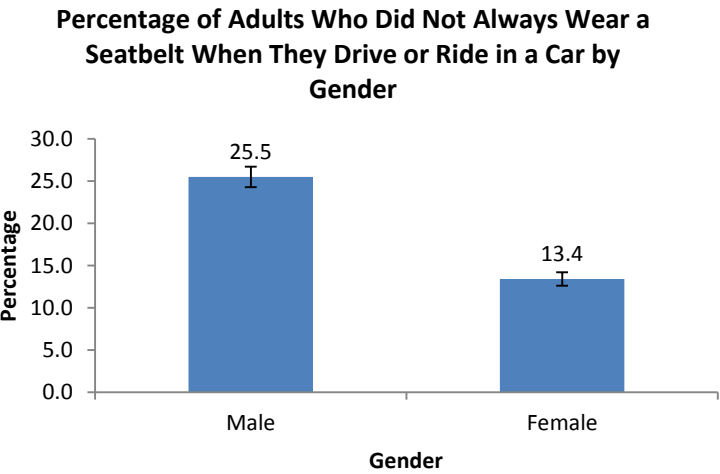
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Specific Subpopulations

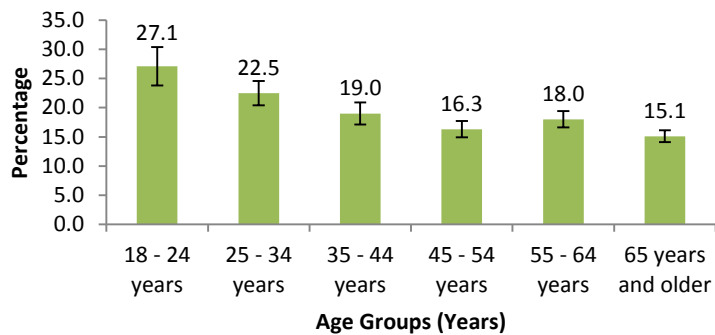


- Percentage of adults 18 years and older who did not always wear a seatbelt was not significantly different by race/ethnicity.



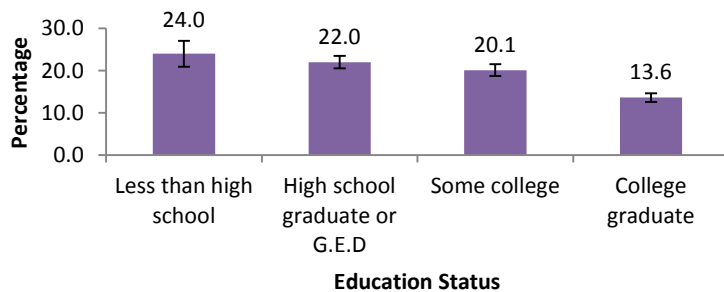
- Prevalence of not always wearing a seatbelt was higher among males 25.5% (95% C.I: 24.3-26.8) than females 13.4% (95% C.I: 12.6-14.3).

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Age



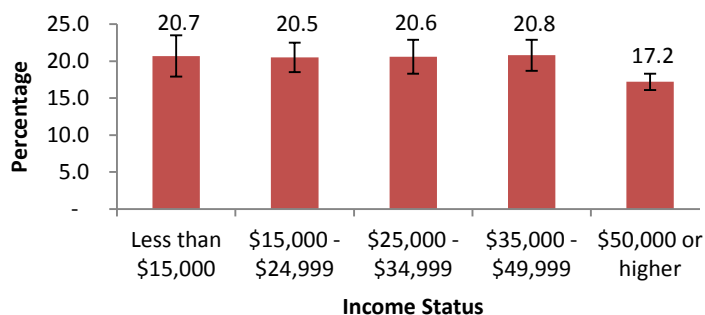
■ Prevalence of not always wearing a seatbelt was significantly higher among adults ages 18-24 years 27.1% (95% C.I: 23.8-30.3) as compared to adults ages 65 years and older 15.1% (95% C.I: 14.1-16.2).

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Education Status



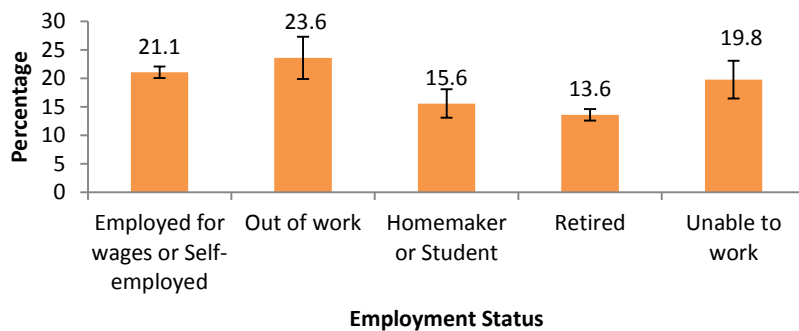
■ Prevalence of not always wearing a seatbelt was significantly higher among adults with less than college graduation as compared to adults with a college graduation.

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Income Status



■ A significantly lower percentage of adults with an annual household income of \$50,000 or more did not always wear a seatbelt as compared to other income groups.

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Employment Status

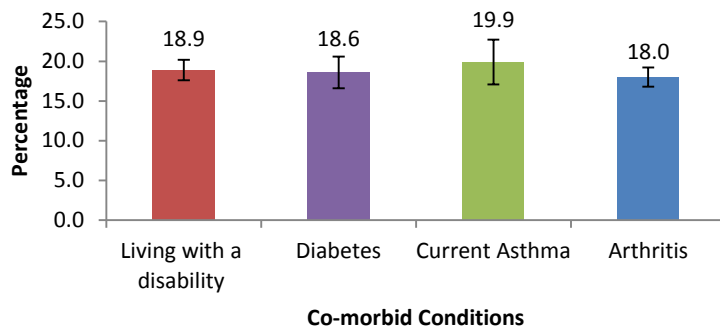


■ About 1 in 4 adults (23.6%) among those that were out of work did not always wear a seatbelt when they drive or ride a car as compared to about 1 in 7 adults (13.6%) among those that were retired.

Table 2. Percentage of adults 18 years and older who did not always wear a seatbelt when they drive or ride in a car by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of adults 18 years and older who did not always wear a seatbelt when they drive or ride in a car			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	1051	18.9	17.6	20.3
Living without a disability	2280	19.5	18.6	20.4
Diabetes Status				
Yes	436	18.6	16.6	20.5
No	2897	19.4	18.6	20.2
Current Asthma Status				
Yes	271	19.9	17.1	22.7
No	3049	19.3	18.5	20.1
Arthritis Status				
Yes	1026	18.0	16.8	19.3
No	2289	19.7	18.8	20.6

Percentage of Adults Who Did Not Always Wear a Seatbelt When They Drive or Ride in a Car by Co-morbid Conditions



■ About 1 in 5 adults with co-morbid conditions like diabetes, current asthma, arthritis or living with a disability did not always wear a seatbelt when they drive or ride in a car.

Summary

About one in five Kansas adults did not always wear a seatbelt when they drove or rode in a car. Not always wearing a seatbelt while driving was significantly higher among young adults (18-24 years), males, and adults with less than high school education. A significantly higher percentage of adults with annual household income lower than \$50,000 did not always wear a seatbelt while driving.

The target set by Healthy People 2020 is to increase the use of safety belts to 92.4%. As 19.4% of adults in Kansas do not always wear a seatbelt, further public health efforts are needed to reach this target in Kansas.

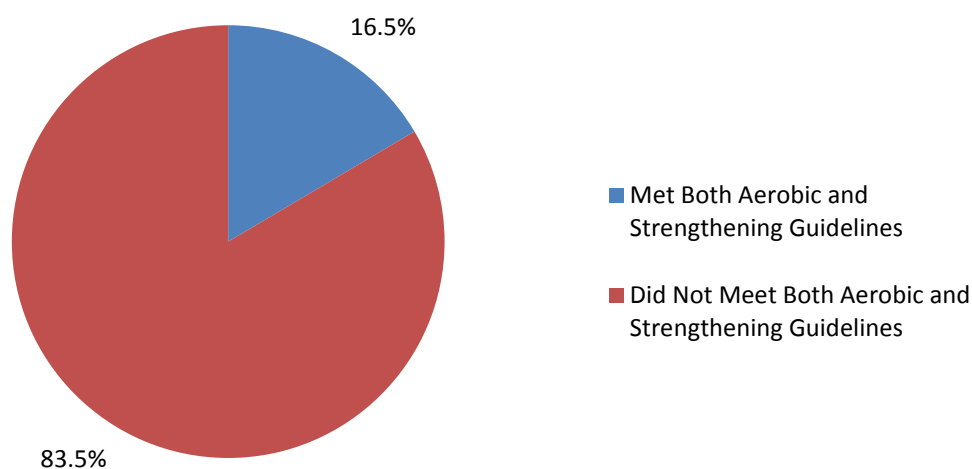
Recommended Level of Physical Activity

Regular physical activity can improve people's overall health and reduce various risks for morbidity and mortality due to a sedentary lifestyle. Studies show that routine physical activity exerts enormous benefits for the prevention of chronic conditions like diabetes mellitus, cardiovascular disease, obesity, cancer, musculoskeletal diseases, and depression.¹⁶

In 2008, the US Department of Health and Human Services released updated physical activity guidelines for Americans. According to these guidelines, adults who participate in moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week or an equivalent combination of moderate and vigorous physical activities and also participate in muscle strengthening activities on two or more days per week would meet the recommended level of physical activity¹⁷.

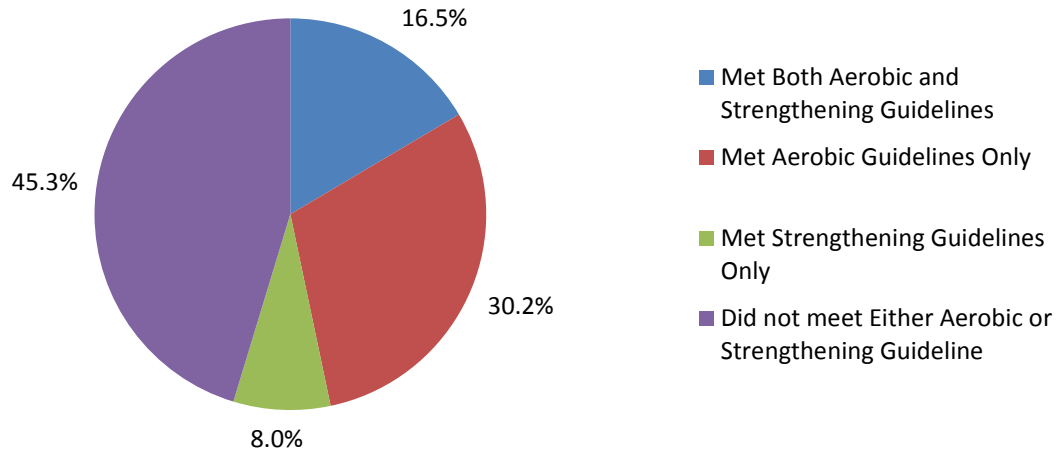
An estimated 83.5% of adult Kansans did not meet both the aerobic and strengthening components of the new physical activity guidelines.

Percentage of Adults Who Did Not Met The Recommended Aerobic and Strengthening Activities



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Status For Recommended Level of Physical Activity Among Kansans



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Table 1. Percentage of adults 18 years and older who did not participate in recommended aerobic and strengthening activities by sociodemographic characteristics in Kansas, 2011 BRFSS

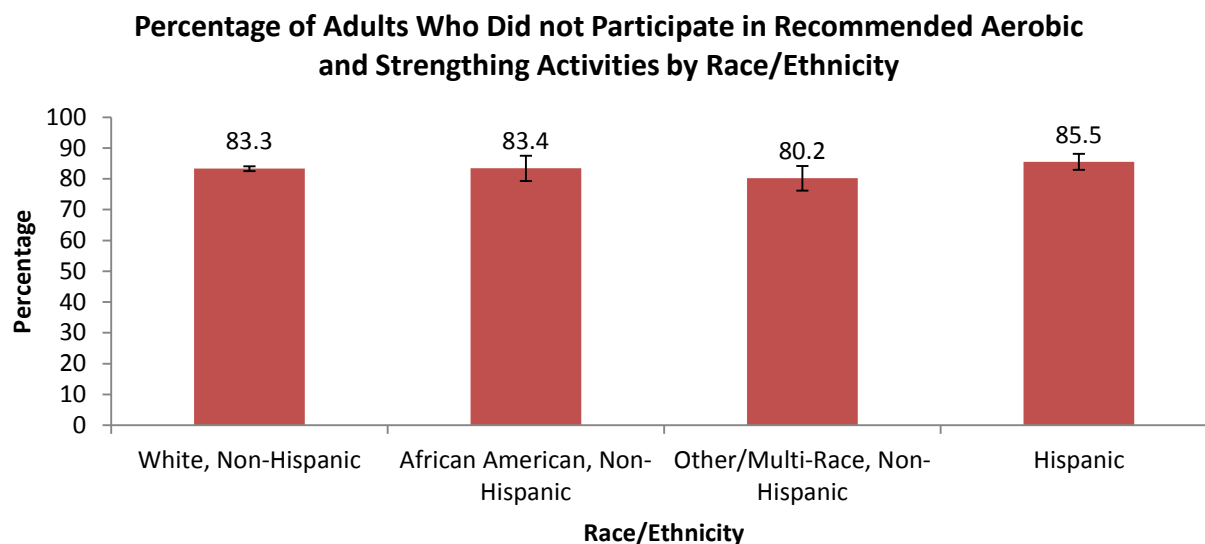
Sociodemographic Characteristics	Percentage of adults 18 years and older who did not participate in recommended aerobic and strengthening activities			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	16604	83.5	82.7	84.2
Age groups				
18 - 24 years	655	76.3	73.1	79.6
25 - 34 years	1553	81.7	79.7	83.8
35 - 44 years	1949	83.6	81.9	85.3
45 - 54 years	3170	84.6	83.2	85.9
55 - 64 years	3801	85.6	84.4	86.8
65 years and older	5476	87.3	86.4	88.3
Gender				
Male	6393	82.1	80.9	83.2
Female	10211	84.8	83.9	85.7
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	14604	83.3	82.5	84.1
African American, Non-Hispanic	626	83.4	79.3	87.5
Other/Multi-Race, Non-Hispanic	577	80.2	76.2	84.2
Hispanic	748	85.5	82.9	88.2

Sociodemographic Characteristics	Percentage of adults 18 years and older who did not participate in recommended aerobic and strengthening activities			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Annual Household Income				
Less than \$15,000	1410	88.9	86.4	91.4
\$15,000 - \$24,999	2678	88.4	86.7	90.1
\$25,000 - \$34,999	1949	84.9	82.7	87.0
\$35,000 - \$49,999	2378	83.2	81.4	85.1
\$50,000 or higher	5900	79.1	77.9	80.3
Education				
Less than high school	1155	89.5	86.9	92.1
High school graduate or G.E.D	4967	87.9	86.6	89.2
Some college	4928	82.9	81.6	84.3
College graduate	5538	76.9	75.7	78.2
Employment Status				
Employed for wages or Self-employed	8480	82.5	81.5	83.4
Out of work	845	85.0	81.6	88.5
Homemaker or Student	1276	79.6	76.8	82.3
Retired	4938	86.4	85.4	87.5
Unable to work	1044	91.3	89.0	93.5

Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

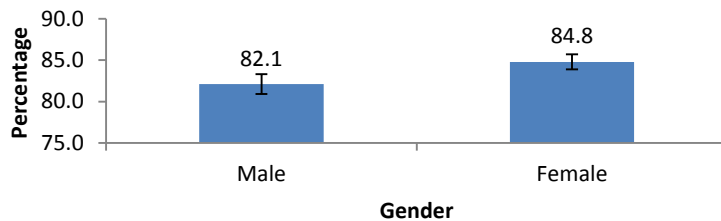
*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

Did Not Participate in Recommended Aerobic and Strengthening Activities by Specific Subpopulations



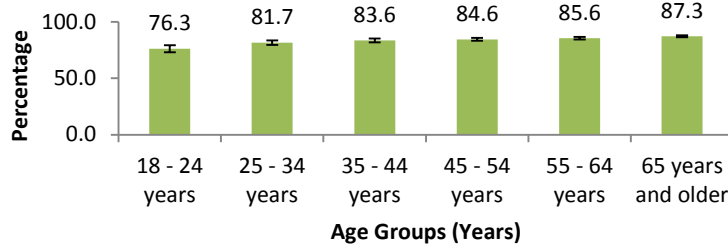
- About four out of five adults did not participate in both the recommended aerobic and strengthening activities among all race/ethnicity subgroups. There was no difference by race/ethnicity subgroups.

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Gender



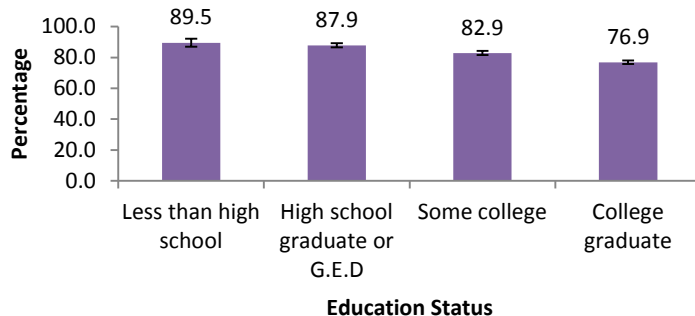
- About 84.8% females (95% C.I: 83.9-85.7) did not participate in recommended level of aerobic and strengthening activities as compared to 82.1 males (95% CI: 80.9-83.2).

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Age



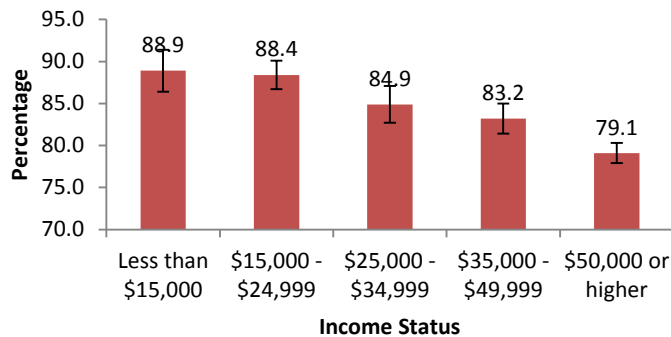
- Recommended level of physical activity decreased with increasing age.
- Almost 9 in 10 adults age 65 years and older (87.3%) did not participate in recommended level of physical activity.

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Education Status



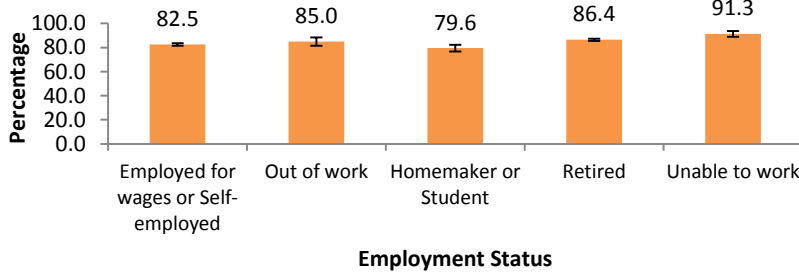
- About 9 in 10 adults with less than high school education (44.8%) did not participate in recommended level of physical activity.
- The percentage of adults not participating in recommended level of physical activity was higher among those with less than high school education (89.5%, 95% CI: 86.9-92.1) as compared to those with college or more education (76.9%, 95% CI: 75.7-78.2).

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Income Status



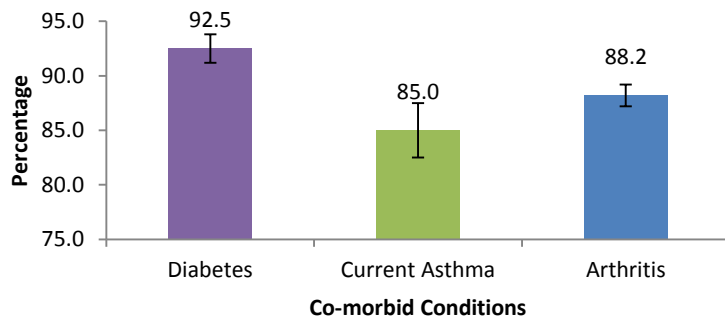
- Percentage of adults not participating in recommended level of physical activity was high among adults with a lower annual household income.
- About 9 in 10 adults (88.9%) with an annual household income less than \$15,000 did not participate in recommended level of physical activity.

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Employment Status



- Among adults who are unable to work, 91.3% did not participate in recommended level of physical activity.

Percentage of Adults Who Did not Participate in Recommended Aerobic and Strengthening Activities by Co-morbid Conditions



- Percentage of non-participation in recommended level of physical activity was high among adults with co-morbid condition.
- More than 9 in 10 adults having diabetes (92.5%) did not participate in recommended level of physical activity.
- About 88.2% adults with arthritis or 85.0% with current asthma did not participate in recommended level of physical activity.

Table 2. Percentage of adults 18 years and older who did not participate in recommended aerobic and strengthening activities by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of adults 18 years and older who did not participate in recommended aerobic and strengthening activities			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Diabetes Status				
Yes	2266	92.5	91.2	93.7
No	14318	82.5	81.7	83.3
Current Asthma Status				
Yes	1408	85.0	82.5	87.6
No	15111	83.3	82.6	84.1
Arthritis Status				
Yes	5438	88.2	87.2	89.3
No	11067	82.0	81.1	82.9

Summary

About one-fifth (16.5%) of the adult Kansans participated in the recommended level of physical activity. The percentage of adults who did not meet the recommended level of physical activity was highest among 65 years and older adults. Percentage of adults who did not meet the recommended level of physical activity was higher among females, adults with a low annual household income and education status. Higher percentage of adults who did not meet the recommended level of physical activity was seen among people with other chronic conditions, such as arthritis and diabetes. A higher percentage of non-participation in leisure time physical activity was seen among adults who are unable to work.

One of the leading health indicators for Healthy People 2020 is to increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity to 20.1%. As only 16.5% met the recommended level of physical activity, further public health efforts are needed to reach this target in Kansas.

No Dental Insurance

Health Indicator
No Dental Insurance
2011 Kansas BRFSS

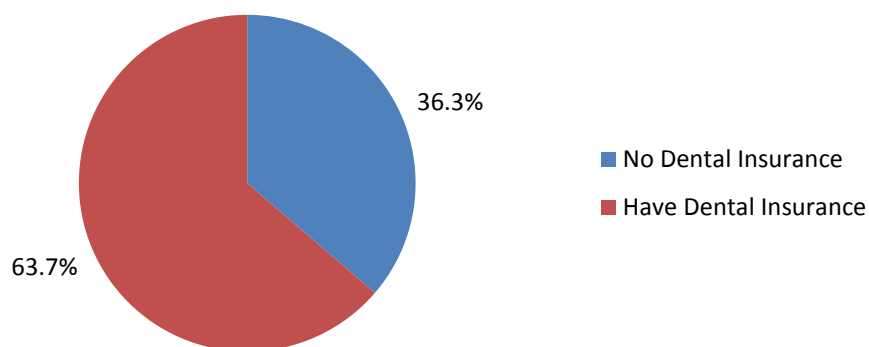
Oral health is an essential and integral component of overall health throughout life and is much more than just healthy teeth. Oral refers to the whole mouth, including the teeth, gums, hard and soft palate, linings of the mouth and throat, tongue, lips, salivary glands, chewing muscles, and upper and lower jaws. Not only does good oral health mean being free of tooth decay and gum disease, but it also means being free of chronic oral pain conditions, oral cancer, birth defects such as cleft lip and palate, and other conditions that affect the mouth and throat ¹⁸.

Oral health and general health status are interrelated. Oral infections in the mouth such as periodontal (gum) diseases may increase the risk of heart disease, may put pregnant women at greater risk of premature delivery, and may complicate control of blood sugar for people living with diabetes ¹⁸

Risk factors such as tobacco use and poor dietary practices affect oral health. One of the leading health indicators of Healthy People 2020 is to increase the proportion of adults who used the oral health care system in the past year ¹⁹.

- About 36.3% of the adult 18 years and older did not have any kind of dental insurance coverage.

Percentage of Adults with No Dental Insurance Among Adults 18 Years and Older



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

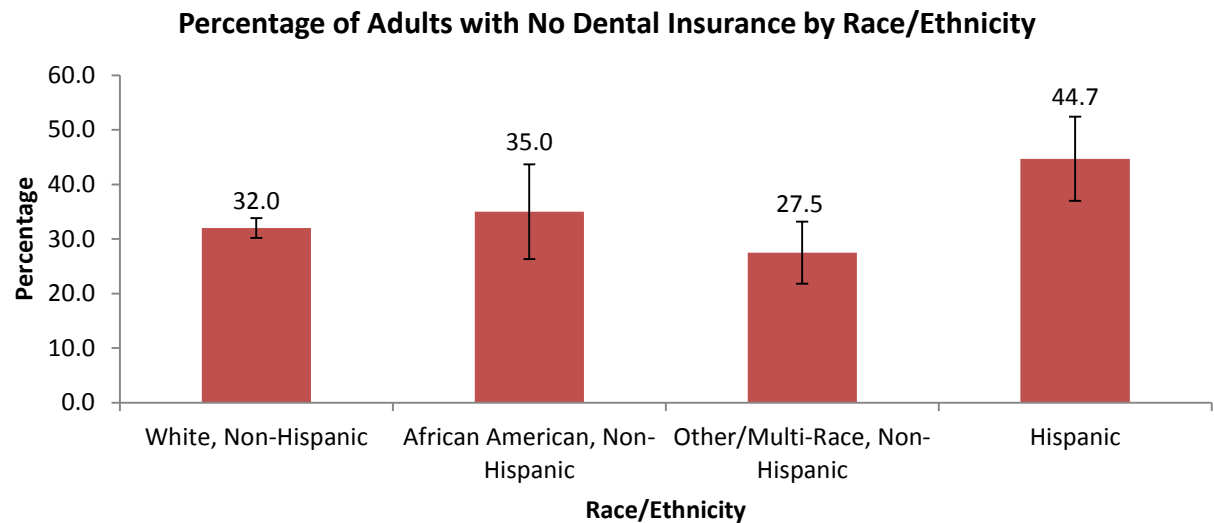
Table 1. Percentage of adults 18 years and older with no dental insurance by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Percentage of adults 18 years and older with no dental insurance			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	3240	36.3	34.4	38.2
Age groups				
18 - 24 years	30	24.4	15.9	32.9
25 - 34 years	136	38.7	32.7	44.6
35 - 44 years	220	29.5	25.7	33.3
45 - 54 years	399	29.1	26.3	31.9
55 - 64 years	698	35.5	33.1	38.0
65 years and older	1757	58.0	56.0	59.9
Gender				
Male	1142	34.2	31.3	37.2
Female	2098	38.3	36.0	40.7
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	2907	32.0	30.2	33.9
African American, Non-Hispanic	113	35.0	26.3	43.6
Other/Multi-Race, Non-Hispanic	105	27.5	21.8	33.2
Hispanic	105	44.7	37.0	52.5
Annual Household Income				
Less than \$15,000	436	72.5	64.8	80.3
\$15,000 - \$24,999	740	64.8	60.1	69.5
\$25,000 - \$34,999	475	51.0	45.2	56.9
\$35,000 - \$49,999	461	32.6	27.9	37.2
\$50,000 or higher	626	16.0	14.2	17.7
Education				
Less than high school	289	56.3	48.2	64.4
High school graduate or G.E.D	1109	41.5	37.7	45.3
Some college	966	35.5	32.2	38.8
College graduate	872	24.0	21.8	26.1
Employment Status				
Employed for wages or Self-employed	933	24.5	22.2	26.7
Out of work	198	62.1	52.6	71.7
Homemaker or Student	231	36.3	29.0	43.5
Retired	1565	55.3	53.2	57.4
Unable to work	308	61.9	55.7	68.0

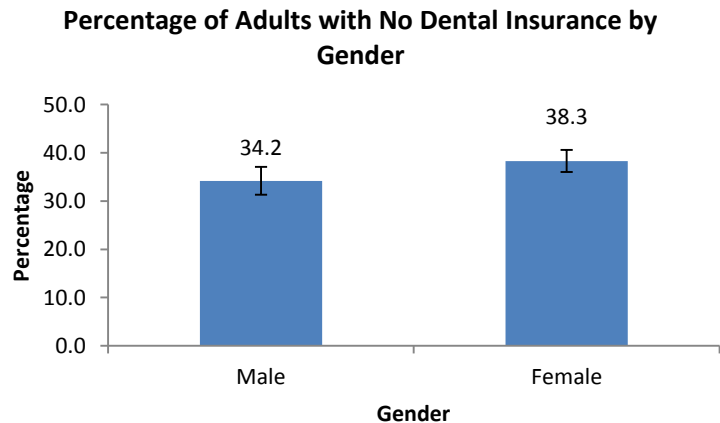
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

No Dental Insurance by Specific Subpopulations

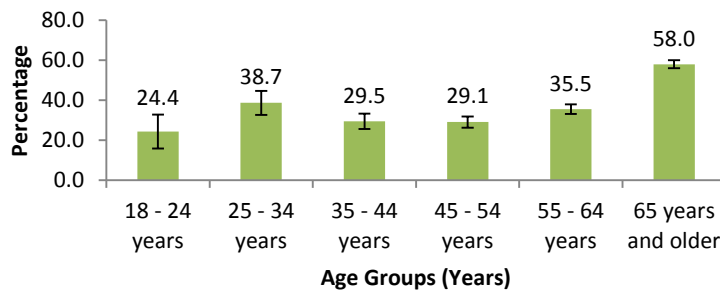


- Prevalence of no dental insurance was significantly higher among Hispanics (44.7%, 95% CI: 37.0-52.5) as compared to Non-Hispanic White (32.0%, 95% CI: 30.2-33.9) and Non-Hispanic Other/Multi-Race (27.5%, 95% CI: 21.8-33.2).



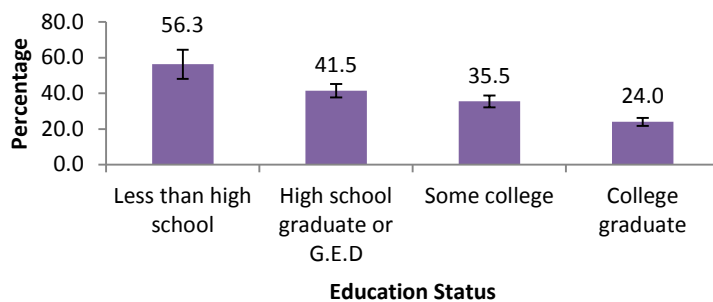
- About 1 in 3 males (34.2%) and about 4 in 10 females (38.3%) had no dental insurance.

Percentage of Adults with No Dental Insurance by Age



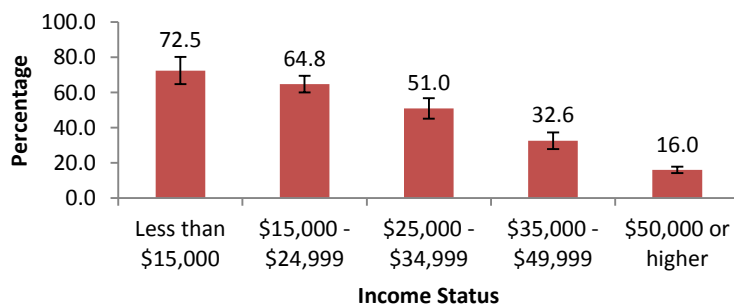
■ Percentage of no dental insurance among ages 65+ was significantly higher than younger age groups.

Percentage of Adults with No Dental Insurance by Education Status

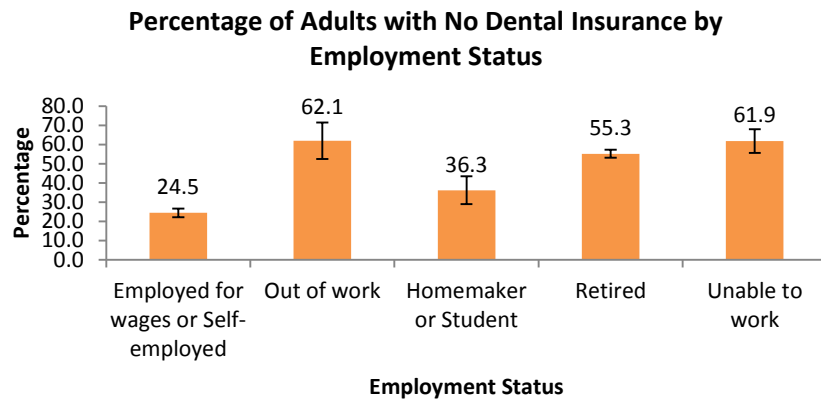


■ About half of the adults (56.3%, 95% CI: 48.2-64.4) with less than high school education had no dental insurance as compared to more than one in four adults (24.0%, 95% CI: 21.8-26.1) with college or higher level education.

Percentage of Adults with No Dental Insurance by Income Status



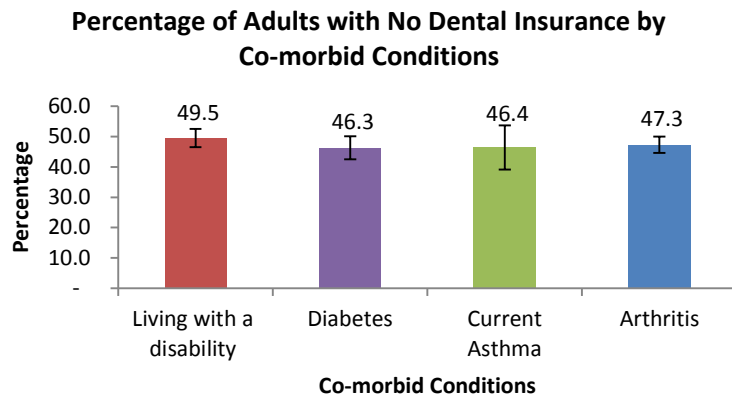
■ About 7 in 10 adults (72.5%, 95% CI: 64.8-80.3) with annual household income less than \$15,000 had no dental insurance as compared to more than 1 in 6 adults (16.0%, 95% CI: 14.2-17.7) with annual household income \$50,000 or more.



■ About two thirds of the adults who are out of work or are unable to work did not have dental insurance. Also, about half of the adults who are retired did not have dental insurance. The percentages of not having dental insurance in these groups were significantly higher than among those who are employed for wages or self employed.

Table 2. Percentage of adults 18 years and older with no dental insurance by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of Adults 18 Years and Older with No Dental Insurance			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	1327	49.5	46.5	52.4
Living without a disability	1906	32.2	29.9	34.5
Diabetes Status				
Yes	538	46.3	42.5	50.1
No	2700	35.3	33.2	37.3
Current Asthma Status				
Yes	290	46.4	39.1	53.7
No	2934	35.4	33.5	37.3
Arthritis Status				
Yes	1379	47.3	44.6	49.9
No	1835	32.8	30.5	35.2



- About half of the adults with chronic health conditions like diabetes, arthritis, or current asthma did not have dental insurance health care coverage.
- About 50% of adults living with a disability did not have dental insurance.

Summary

Currently, about one-third (36.3%) of the population did not have any dental insurance. A significantly higher percentage of Hispanics did not have dental insurance. Percentage of not having dental insurance was significantly higher among ages 65+ than younger age groups. Percentage of adults with dental insurance increased with an increase in educational status and annual household income. Higher percentage of adults with other chronic conditions such as diabetes, arthritis, current asthma or living with a disability did not have dental insurance. A higher percentage of adults who were unable to work or are out of work did not have dental insurance as compared to adults who were employed.

One of the leading health indicators for healthy people 2020 is to increase the proportion of adults who used the oral health care system in the past year to 49.0%. One of the main reasons cited by Kansas adults for not accessing dental care is lack of dental insurance. Only 36.3% of Kansans did not have any dental insurance in 2011.

Binge Drinking

Leading Health Indicator

Binge Drinking

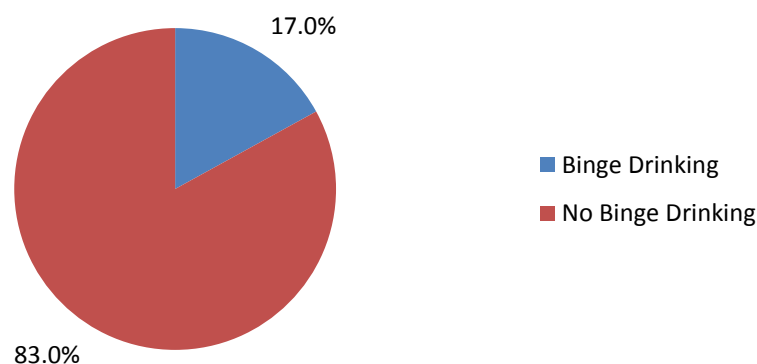
2011 Kansas BRFSS

Alcohol consumption is the third leading preventable cause of death in the United States.²⁰ Alcohol abuse is generally measured by two types of alcohol consumption patterns: binge and heavy drinking. Binge drinking is defined as adult males having five or more drinks on one occasion and adult females having four or more drinks on one occasion in the past 30 days. It is associated with alcohol poisoning, unintentional injuries, suicide, hypertension, pancreatitis, sexually transmitted diseases, and meningitis, among other disorders. The National Institute on Alcohol Abuse and Alcoholism reported that binge drinking underlies many negative social costs, including interpersonal violence, drunk driving, and lost economic productivity.²¹

One of the leading health indicators of the Healthy People 2020 is to reduce the proportion of adults aged 18 years and older engaging in binge drinking during the past 30 days.²²

- In 2011, the prevalence of binge drinking was 17%.

Binge Drinking Among Adults 18 Years and Older



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

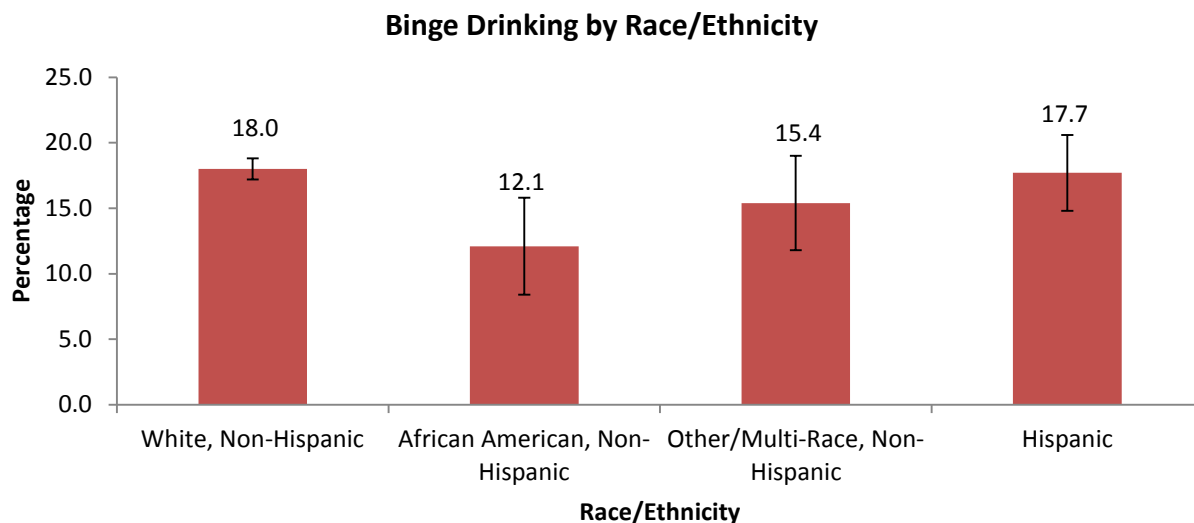
Table 1. Binge drinking among adults aged 18 years and older by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Binge Drinking Among Adults 18 Years and Older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	2281	17.0	16.2	17.8
Age groups				
18 - 24 years	264	28.3	25.0	31.6
25 - 34 years	489	28.0	25.7	30.4
35 - 44 years	432	19.5	17.6	21.4
45 - 54 years	559	16.4	15.0	17.8
55 - 64 years	378	9.2	8.1	10.2
65 years and older	159	3.1	2.5	3.6
Gender				
Male	1372	23.1	21.8	24.3
Female	909	11.2	10.4	12.1
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	1988	18.0	17.2	18.9
African American, Non-Hispanic	56	12.1	8.4	15.8
Other/Multi-Race, Non-Hispanic	86	15.4	11.8	19.0
Hispanic	141	17.7	14.8	20.6
Annual Household Income				
Less than \$15,000	132	14.6	11.8	17.5
\$15,000 - \$24,999	278	15.3	13.3	17.3
\$25,000 - \$34,999	206	15.5	13.2	17.8
\$35,000 - \$49,999	326	17.5	15.5	19.6
\$50,000 or higher	1120	19.5	18.3	20.7
Education				
Less than high school	116	14.7	11.8	17.5
High school graduate or G.E.D	603	16.5	15.0	17.9
Some college	730	18.5	17.1	19.9
College graduate	832	16.7	15.5	17.9
Employment Status				
Employed for wages or Self-employed	1688	21.1	20.1	22.2
Out of work	160	21.7	18.0	25.4
Homemaker or Student	181	16.2	13.6	18.8
Retired	203	4.5	3.8	5.2
Unable to work	46	5.2	3.3	7.0

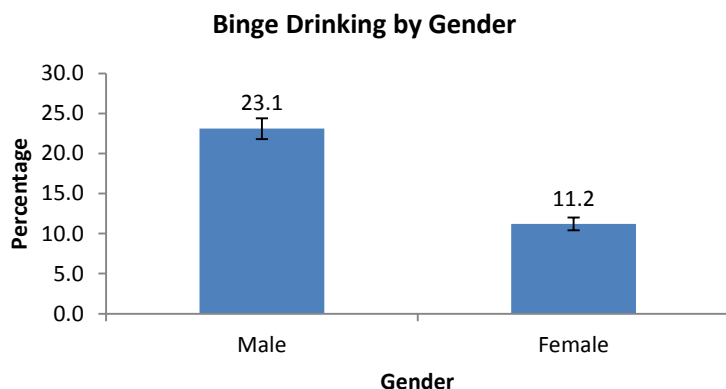
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

Binge Drinking by Specific Subpopulations

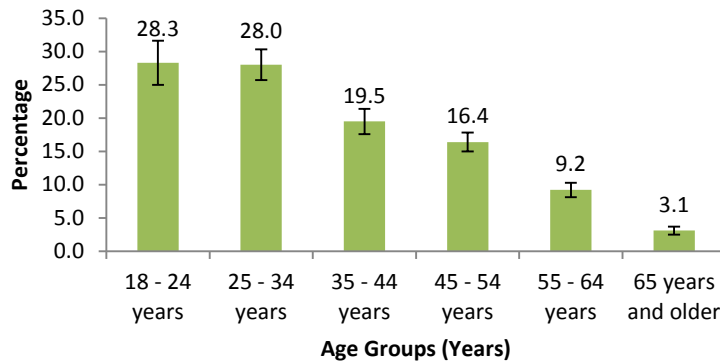


- About 1 in 6 Non-Hispanic White adults (18.0%) and Hispanic adults (17.7%) engaged in binge drinking. No significant difference was seen in binge drinking among race and ethnicity subgroups.



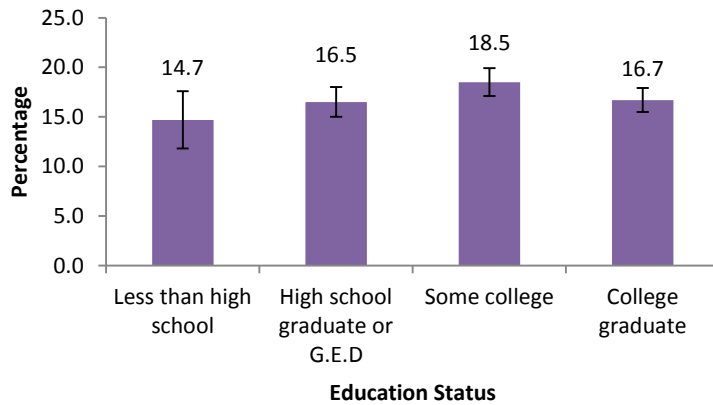
- The prevalence of binge drinking among males was 23.1% (95% CI: 21.8-24.3).
- The prevalence of binge drinking among females was 11.2% (95% CI: 10.4-12.1).
- A significantly higher percentage of males were binge drinkers than females.

Binge Drinking by Age Groups



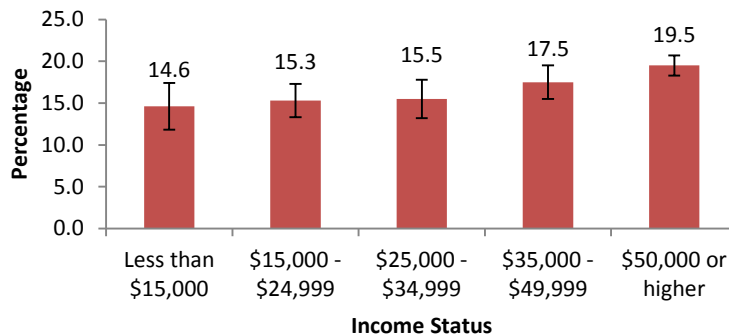
■ About 1 in 4 adults (28.3%) ages 18-24 years were engaged in binge drinking.

Binge Drinking by Education Status



■ About 1 in 5 adults (18.5%, 95% CI: 17.1-19.9) with some college education were engaged in binge drinking.

Binge Drinking by Income Status



■ About 1 in 5 adults (19.5%, 95% CI: 18.3-20.7) with an annual household income of \$50,000 or higher were engaged in binge drinking.

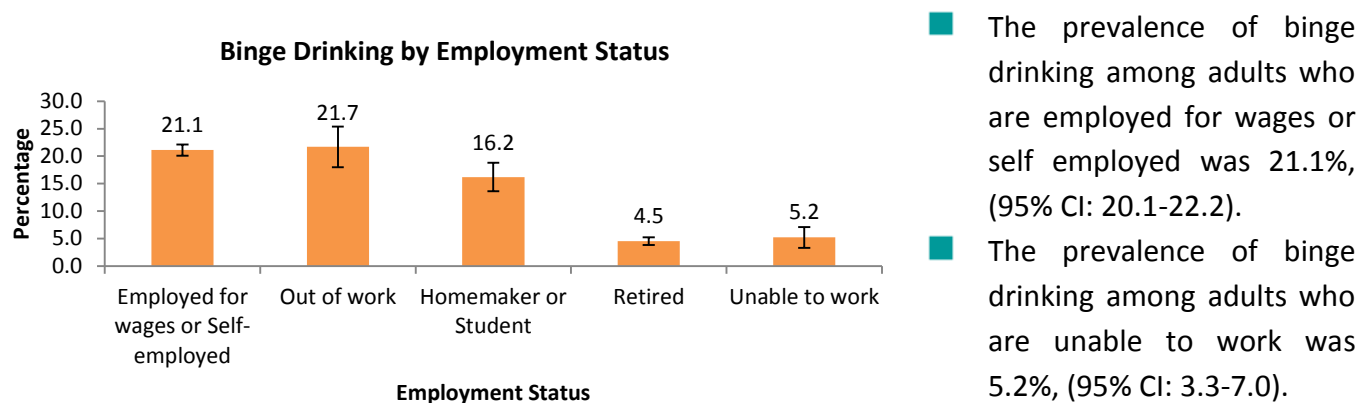
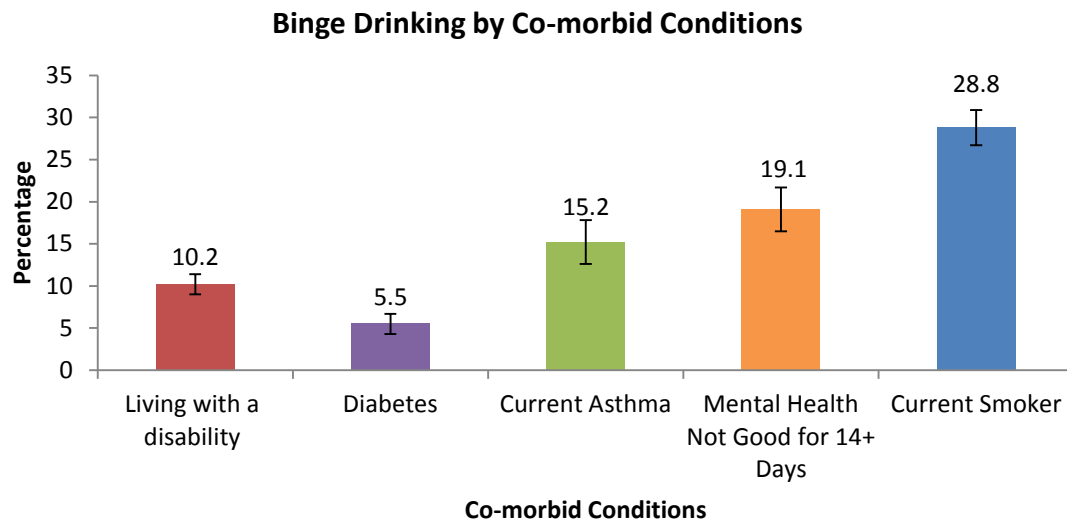


Table 2. Binge drinking among adults aged 18 years and older by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Binge Drinking Among Adults 18 Years and Older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	416	10.2	9.0	11.3
Living without a disability	1863	19.2	18.3	20.2
Diabetes Status				
Yes	111	5.5	4.3	6.7
No	2167	18.2	17.4	19.0
Current Asthma Status				
Yes	161	15.2	12.6	17.8
No	2110	17.2	16.4	18.0
Arthritis Status				
Yes	379	8.6	7.6	9.6
No	1886	19.5	18.6	20.5



- More than 1 in 3 current smokers (28.8%) and about 1 in 5 adults (19.1%) whose mental health was not good for 14 or more days in past 30 days did binge drinking.

Summary

In 2011, prevalence of binge drinking was 17%. Males and younger adults had a high prevalence of binge drinking. Current smokers, adults whose mental health was not good for 14 or more days in the past 30 days and adults with current asthma had high prevalence of binge drinking.

The Healthy People 2020 target for the substance abuse objective was to reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month. As 17% of adults in Kansas are binge drinkers of alcoholic beverages during the past month, further public health efforts are needed to address this issue.

Current Smoking

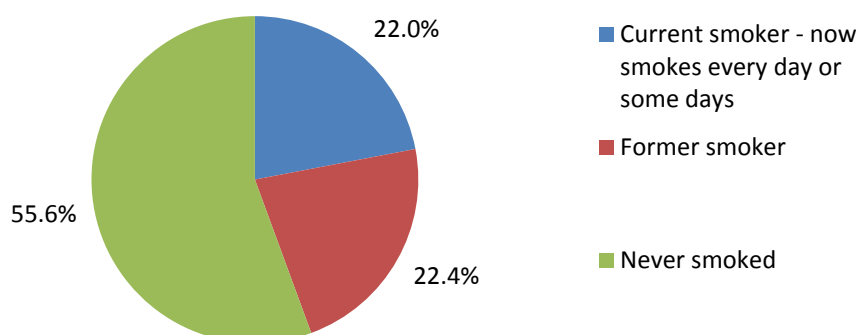
Tobacco use is one of the most preventable causes of morbidity and mortality.²³ More deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and homicides combined.^{24,25} Reducing the prevalence of cigarette smoking is one of the most important public health goals because of the strong association of tobacco use with diseases and premature mortality.²⁶ At present, nearly 40 diseases or causes of death are known to be positively associated with cigarette smoking.²⁷ Smoking causes many types of cancers including lung cancer, coronary heart disease, stroke, peripheral vascular disease, emphysema, bronchitis, chronic airway obstruction etc.²⁸ Cigarette smoking has many adverse reproductive and early childhood effects, including increased risk for infertility, stillbirth, and low birth weight.²⁸

One of the leading health indicators of Healthy People 2020 is to reduce cigarette smoking by adults.

2011 BRFSS data defines current smokers as adults who have smoked 100 cigarettes in their entire life and smoke now, either every day or some days.

- About 1 in 5 adults (22.0%) currently smokes cigarettes.
- About 1 in 5 adults (22.4%) is a former smoker.
- About 56% of adults have never smoked.
- More than half of current smokers (56.8%) tried to quit smoking for one day or longer in the past year.

Percentage of Adults by Smoking Status



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

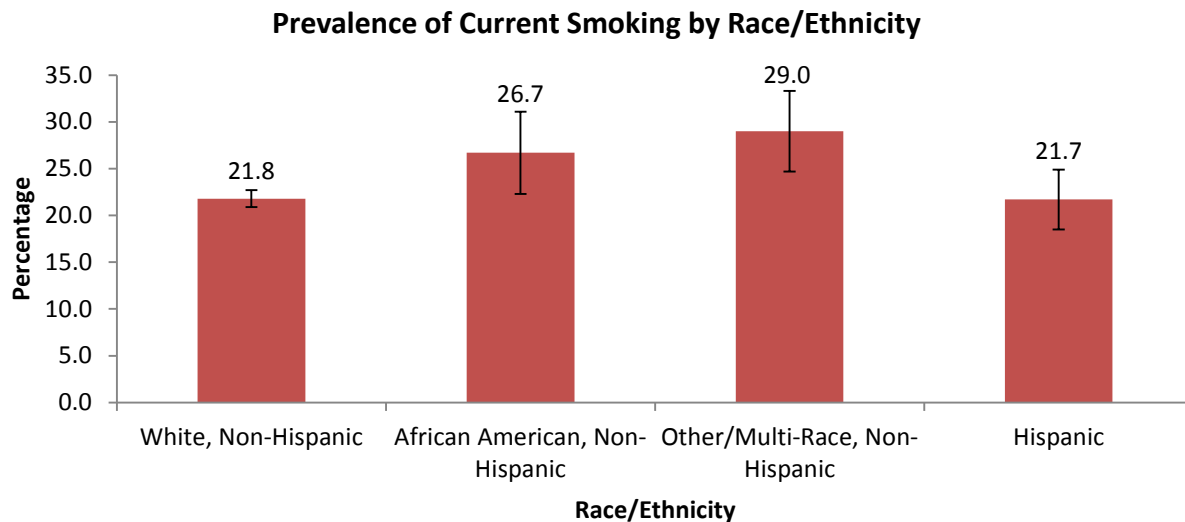
Table 1. Prevalence of current smoking among adults aged 18 years and older by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Prevalence of Current Smoking Among Adults 18 Years and Older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	3547	22.0	21.2	22.8
Age groups				
18 - 24 years	232	24.5	21.4	27.5
25 - 34 years	516	30.4	28.0	32.9
35 - 44 years	503	23.7	21.6	25.7
45 - 54 years	896	25.5	23.8	27.1
55 - 64 years	818	18.7	17.3	20.1
65 years and older	582	9.5	8.6	10.3
Gender				
Male	1572	24.6	23.3	25.9
Female	1975	19.5	18.5	20.4
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	2977	21.8	20.9	22.7
African American, Non-Hispanic	176	26.7	22.3	31.1
Other/Multi-Race, Non-Hispanic	205	29.0	24.7	33.4
Hispanic	172	21.7	18.5	24.9
Annual Household Income				
Less than \$15,000	535	38.9	35.5	42.3
\$15,000 - \$24,999	805	33.2	30.8	35.5
\$25,000 - \$34,999	484	26.4	23.9	28.9
\$35,000 - \$49,999	479	20.9	18.8	22.9
\$50,000 or higher	815	13.2	12.2	14.3
Education				
Less than high school	423	38.8	35.4	42.3
High school graduate or G.E.D	1344	28.3	26.7	29.9
Some college	1173	21.6	20.2	22.9
College graduate	603	8.6	7.8	9.5
Employment Status				
Employed for wages or Self-employed	1839	21.6	20.5	22.6
Out of work	380	43.6	39.5	47.7
Homemaker or Student	257	16.8	14.4	19.1
Retired	598	11.0	10.0	12.0
Unable to work	468	44.0	40.2	47.7

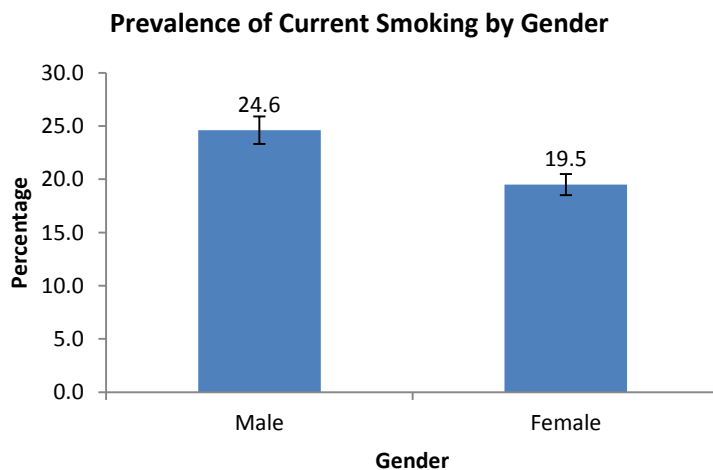
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

Current Smoking by Specific Subpopulations

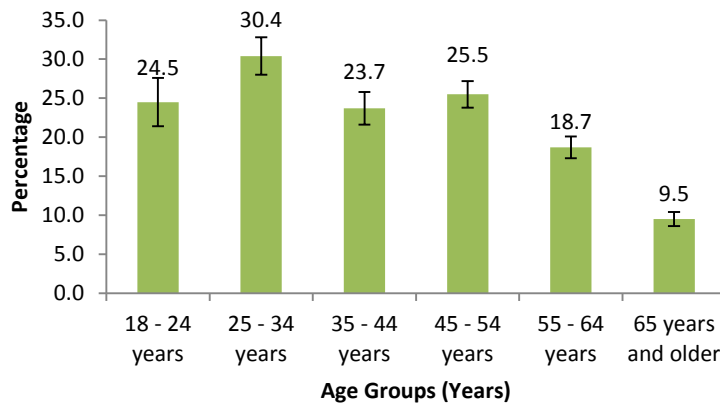


- About 1 in 4 African Americans (25.2%, 95% CI: 18.8-31.5) were current smokers.
- One in seven Hispanics and 1 in 6 non-Hispanics were current smokers.



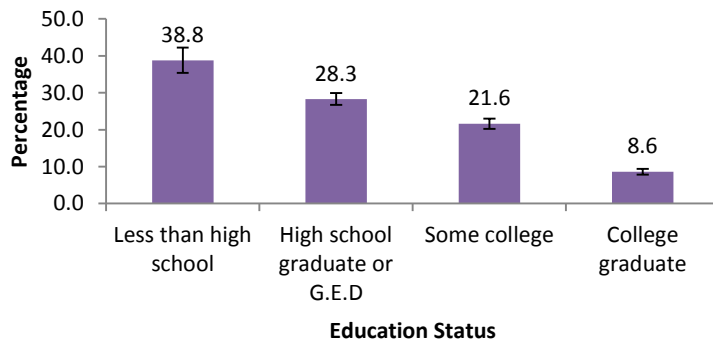
- About 1 in 6 adult males (24.6%, 95% CI: 23.3-25.9) and females (19.5%, 95% CI: 18.5-24.9) were current smokers.
- The prevalence of current smoking was significantly higher in males than in females.

Prevalence of Current Smoking by Age Groups



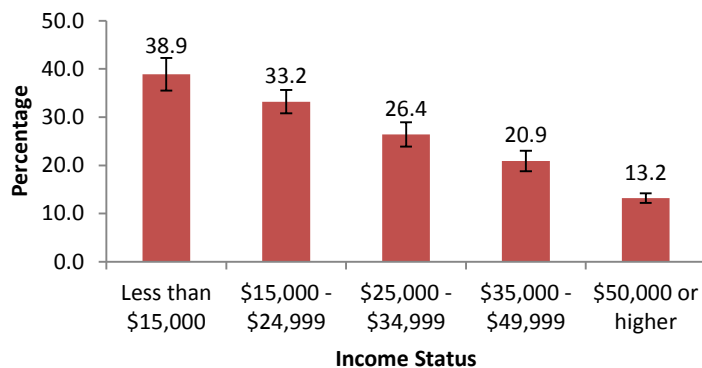
- About 1 in 3 adults aged 25-34 years were current smokers.
- Prevalence of current smoking was higher among adults of younger age groups as compared to adults 65 years and older.

Prevalence of Current Smoking by Education Status

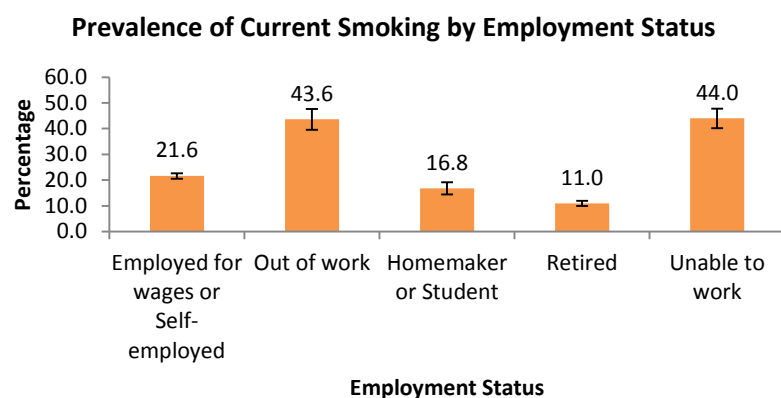


- About 38.8% (95% CI: 35.4-42.3) of adults with less than high school education were current smokers.
- About 8.6% (95% CI: 7.8-9.5) of adults with college or higher education were current smokers.
- Prevalence of current smoking was significantly higher among adults with less than high school education as compared to those with more education.

Prevalence of Current Smoking by Income Status



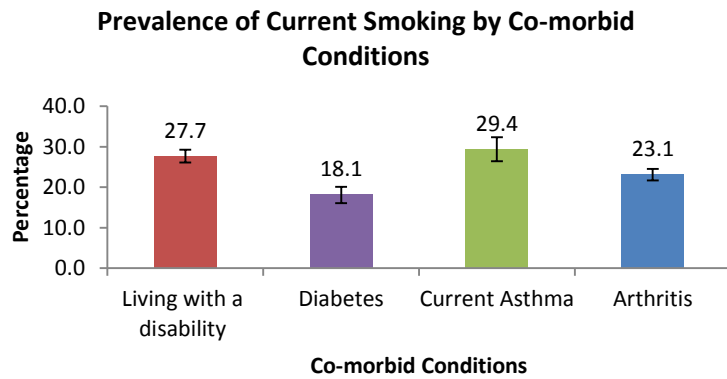
- Prevalence of current smoking was high among the lower income population.
- About 1 in 3 adults (38.9%) whose annual household income was less than \$15,000 were current smokers as compared to 13.2% of adults whose annual household income was equal to or more than \$50,000.



■ About 2 in 5 adults who were out of work or unable to work were current smokers.

Table 2. Prevalence of current smoking among adults aged 18 years and older by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Prevalence of Current Smoking Among Adults 18 Years and Older			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	1303	27.7	26.1	29.3
Living without a disability	2131	19.9	18.9	20.8
Diabetes Status				
Yes	368	18.1	16.1	20.2
No	3176	22.4	21.5	23.2
Current Asthma Status				
Yes	400	29.4	26.4	32.5
No	3124	21.2	20.4	22.0
Arthritis Status				
Yes	1165	23.1	21.7	24.6
No	2357	21.6	20.6	22.5



■ About 3 in 10 adults living with a disability (27.7%) or with current asthma (29.4%) were current smokers.

Summary

The prevalence of current smoking was 22.0% and was higher among young and middle-aged adults. The prevalence was also decidedly higher among adults with a lower education status. It was also higher among adult with a lower annual household income. About 57.0% of current smokers had tried to quit smoking for one day or longer in the past year.

The Healthy People 2020 target for the tobacco use objective is to reduce cigarette smoking among adults to 12%. As 22% of adults in Kansas are current cigarette smokers, further public health efforts are needed to reach the target in Kansas.

Smokeless Use

Leading Health Indicator

Smokeless Use

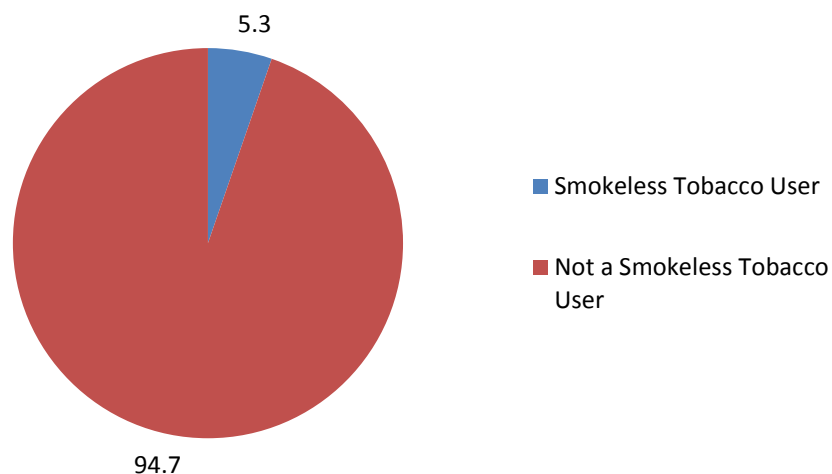
2011 Kansas BRFSS

One of the goals of Healthy People 2020 for tobacco use is to reduce illness, disability, death related to tobacco use. Smokeless tobacco causes a number of serious oral health problems, including cancer of the mouth and gums, periodontal disease, and tooth loss. The one of the objectives of Healthy People 2020 for tobacco use is to reduce use of smokeless tobacco products by adults.²⁹

2011 BRFSS data defines smokeless tobacco user as an adult who currently uses chewing tobacco, snuff or snus (Swedish for snuff) some days or every day.

■ About 5.3% of adults were smokeless tobacco users.

Percentage of Adults by Smokeless Tobacco Use Status



Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

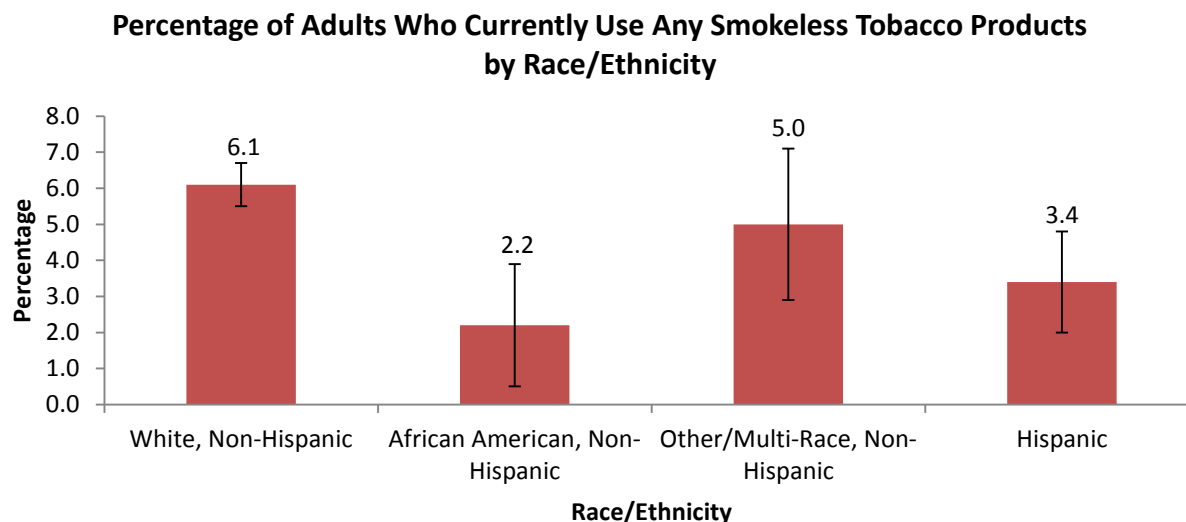
Table 1. Percentage of adults 18 years and older who currently use any smokeless tobacco products by sociodemographic characteristics in Kansas, 2011 BRFSS

Sociodemographic Characteristics	Percentage of Adults 18 years and older Who Currently Use Any Smokeless Tobacco Products			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Total	760	5.3	4.9	5.8
Age groups				
18 - 24 years	68	6.9	5.1	8.7
25 - 34 years	142	8.1	6.7	9.5
35 - 44 years	150	7.2	6.0	8.4
45 - 54 years	165	5.1	4.3	6.0
55 - 64 years	113	2.7	2.2	3.3
65 years and older	122	2.2	1.7	2.6
Gender				
Male	684	10.1	9.2	11.0
Female	76	0.7	0.5	0.9
Race/Ethnicity (Age-adjusted)*				
White, Non-Hispanic	687	6.1	5.5	6.6
African American, Non-Hispanic	15	2.2	0.5	3.8
Other/Multi-Race, Non-Hispanic	28	5.0	2.9	7.1
Hispanic	28	3.4	2.0	4.7
Annual Household Income				
Less than \$15,000	51	3.6	2.3	4.8
\$15,000 - \$24,999	109	5.5	4.3	6.7
\$25,000 - \$34,999	89	6.5	4.9	8.0
\$35,000 - \$49,999	112	5.9	4.6	7.2
\$50,000 or higher	316	5.6	4.9	6.3
Education				
Less than high school	66	6.0	4.1	7.8
High school graduate or G.E.D	293	6.9	6.0	7.8
Some college	232	5.6	4.8	6.4
College graduate	169	3.1	2.5	3.6
Employment Status				
Employed for wages or Self-employed	521	6.6	6.0	7.2
Out of work	55	7.1	4.8	9.4
Homemaker or Student	23	2.1	1.1	3.1
Retired	111	2.3	1.8	2.9
Unable to work	48	5.2	3.4	7.0

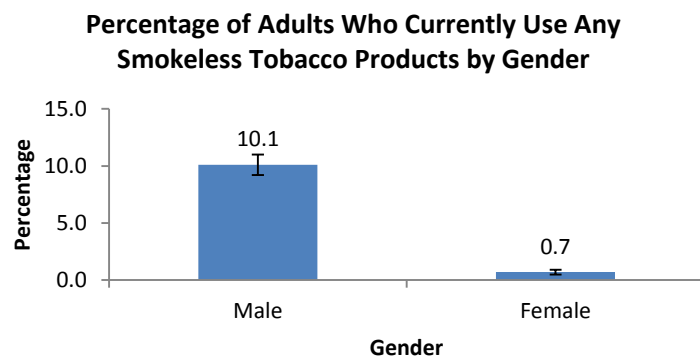
Source: 2011 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Prevalence estimates for race and ethnicity were age-adjusted to the U.S. 2000 standard population.

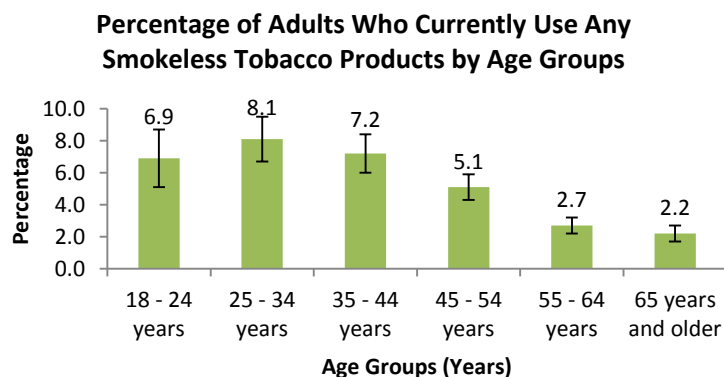
Current Use of Any Smokeless Tobacco Products by Specific Subpopulations



- About 6% of Non-Hispanic Whites were current smokeless tobacco product users.

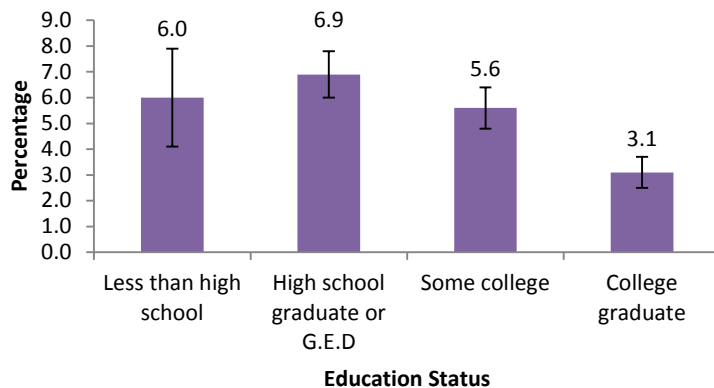


- About 1 in 10 adult males (10.1%, 95% CI: 9.2-11.0) and females (0.7%, 95% CI: 0.5-0.9) were current smokeless product users.
- The prevalence of current smoking was significantly higher in males than females.



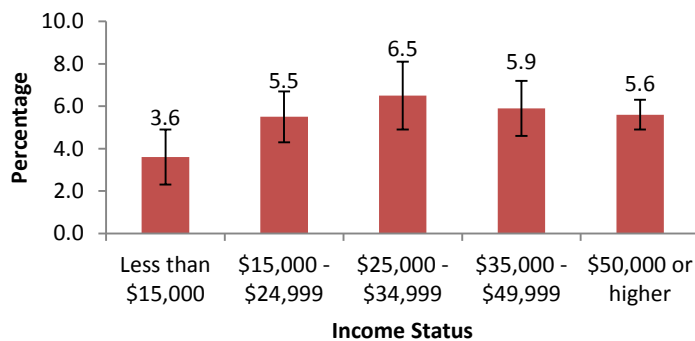
- About 8.1% adults aged 25-34 years were current smokeless tobacco product users.
- Prevalence of smokeless tobacco use was higher among adults of younger age groups as compared to adults' ages 65 years and older.

Percentage of Adults Who Currently Use Any Smokeless Tobacco Products by Education Status



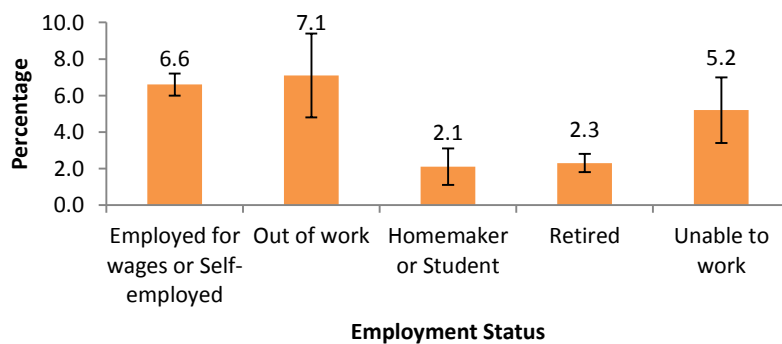
- About 6.9% (95% CI: 6.0-7.8) of adults with less than high school education were smokeless tobacco product users.
- About 3.1% (95% CI: 2.5-3.6) of adults with college or higher education were current smokeless tobacco product users.
- Prevalence of smokeless tobacco products use was significantly higher among adults with less than high school education as compared to those with more education.

Percentage of Adults Who Currently Use Any Smokeless Tobacco Products by Income Status



- Smokeless tobacco use was similar in all income groups at around 5.0%.

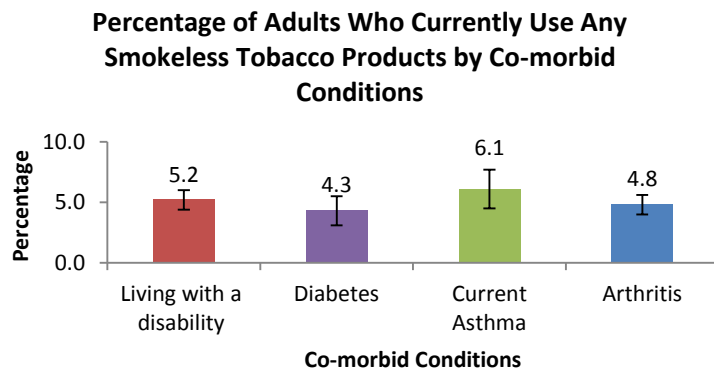
Percentage of Adults Who Currently Use Any Smokeless Tobacco Products by Employment Status



- A significantly higher percentage of adults who are employed for wages or self employed currently used smokeless products as compared to retired adults, homemakers or students.

Table 2. Percentage of adults 18 years and older who currently use any smokeless tobacco products by co-morbid conditions in Kansas, 2011 BRFSS

Co-morbid conditions	Percentage of Adults 18 Years and Older Who Currently Use Any Smokeless Tobacco Products			
	Unweighted Frequency	Weighted Percentage	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Disability Status				
Living with a disability	217	5.2	4.4	6.0
Living without a disability	517	5.3	4.7	5.8
Diabetes Status				
Yes	79	4.3	3.1	5.4
No	679	5.4	5.0	5.9
Current Asthma Status				
Yes	70	6.1	4.5	7.7
No	685	5.3	4.8	5.7
Arthritis Status				
Yes	199	4.8	4.0	5.6
No	555	5.5	4.9	6.0



■ About 1 in 20 adults living with a disability, diabetes, current asthma or with arthritis were current smokeless tobacco product users.

Summary

The prevalence of current smokeless tobacco use was 5.3%. The prevalence of current smokeless tobacco use was higher among males, young and middle-aged adults. The prevalence is also higher among adults with a lower education status.

The Healthy People 2020 target for the tobacco use objective is to reduce use of smokeless tobacco products by adults to 0.3%. As 5.3% of adults in Kansas are currently using smokeless tobacco products, further public health efforts are needed to reach the target in Kansas.



Technical Notes

METHODOLOGY

Sampling

In 2011, the CDC advised all states and territories to implement a dual frame sampling methodology for BRFSS survey and to include both: adults 18 years and older living in private residences with landline telephone service; and adults 18 years and older living in private residences with cellular telephone only service. The states were advised to target at least 20 percent of their total sample of complete interviews to be from cellular telephone only service households. This change in sampling methodology of the BRFSS was made to address the impact of growing number of households with cellular telephone only service and differences in the demographic profile of the people who live in cellular telephone only service households and to maintain representativeness, coverage, and validity of BRFSS data.

The dual frame sampling methodology for 2011 survey included two components: 1) Landline telephone service survey component; and 2) Cellular telephone only service component.

The landline telephone survey component of this dual frame sampling method remained identical to the sampling method for 2009 and 2010 surveys. It was comprised of implementation of disproportionate stratified sampling methodology that included selection of landline telephone numbers within 10 geographic strata comprised of county grouping instead of random selection of telephone numbers from the entire state as a single geographic stratum. These 10 geographical strata include; Johnson county, Sedgwick county, Shawnee county, Wyandotte county, Northwest public health district, Southwest public health district, North Central public health district, South Central public health district excluding Sedgwick county, Northeast public health district excluding Johnson, Shawnee and Wyandotte counties, and Southeast public health district. The sample that was drawn from each geographical stratum was based on population size within each geographical stratum, the confidence level and the margin of error. The landline telephone component sampling was designed to reach non-institutionalized adults ages 18 years and older living in private residences in Kansas. As in previous years, this method of probability sampling involved assigning sets of one hundred telephone numbers with the same area code, prefix, and first two digits of the suffix and all possible combinations of the last two digits ("hundred blocks") into two strata. Those hundred blocks that had at least one known household number were designated high density (also called "one-plus blocks"); hundred blocks with no known household numbers were designated low density ("zero blocks"). The high density

stratum was sampled at a rate 1.5 times higher than the low density stratum, resulting in greater efficiency.

The cellular telephone survey component of this dual frame sampling method included the sampling frame comprised of all 1000-series blocks dedicated to cellular devices serving the state with a nonzero chance of inclusion. The cellular telephone survey component sampling was designed to reach non-institutionalized adults ages 18 years and older living in the private residences with cellular telephone only service in Kansas.

Sample Size

For 2011 Kansas BRFSS survey, the target total (combined landline and cell phone sample) sample size was about 19,200 complete interviews with a target of 16,000 complete interviews for the landline telephone survey component and 3,200 complete interviews for the cellular telephone survey component.

Weighting Procedure

Data weighting is an important statistical process that attempts to remove bias in the sample. It corrects for differences in the probability of selection due to non-response and non-coverage errors. It adjusts variables of age and gender between the sample and the entire population. Data weighting also allows the generalization of findings to the whole population, not just those who respond to the survey.

Once BRFSS data are collected, statistical procedures are undertaken to make sure the estimates of health indicators generated by the analysis of survey data are representative of the population for each state and/or local area.

This weighting process of BRFSS data includes calculation of design weight as one of its components: In the BRFSS survey, the design factors that affect weighting include the number of residential telephones in the household, number of adults in the household and geographic or density stratification. Weighting process of BRFSS also involves adjustment for the distribution of the sample data so that it reflects more accurately the total population of the sampled area. The method used for this adjustment through and including 2010 was the post-stratification method.

Beginning with the 2011 dataset, the CDC has adopted the raking method in place of post stratification weighting procedure as the sole BRFSS statistical weighting method.

The new BRFSS weighting methodology was comprised of two components:

- ✓ Design Weight
- ✓ Raking Adjustment

Design Weight: Design Weight was calculated by using computational formula:

Design Weight = $_STRWT * (1/NUMPHON2) * NUMADULT$

- ✓ The stratum weight ($_STRWT$) was calculated using:
 - Number of available records (NRECSTR) and the number of records selected (NRECSEL) within each geographic strata ($_GEOSTR$) and density strata ($_DENSTR$);
 - Geographic strata (entire state, counties, census tracts, etc.); and
 - Density strata (1=listed numbers, 2=not listed numbers).
 - Within each $_GEOSTR * _DENSTR$ combination: The stratum weight ($_STRWT$) was calculated from the average of the NRECSTR and the sum of all sample records used to produce the NRECSEL.

The computational formula for stratum weight:

$STRWT = NRECSTR / NRECSEL$

- ✓ $1/NUMPHON2$ was the inverse of the number of residential telephone numbers in the respondent's household.
- ✓ $NUMADULT$ was the number of adults 18 years and older in the respondent's household.

Final Weight was calculated for analysis of survey data to generate estimates for health indicators that were representative of the general population.

The computational formula for Final weight:

Final Weight = Design Weight * Raking Adjustment

Raking adjustment: Raking adjusts estimates within each state by using:

- Telephone source,
- Detailed race and ethnicity,
- Regions within state,
- Education level,
- Marital status,
- Age group by gender,
- Gender by race and ethnicity,
- Age group by race and ethnicity, and
- Renter/homeowner status.

Raking was completed by adjusting for one demographic variable (or dimension) at a time. For example, when weighting by age and gender, weights were first adjusted for gender groups, then those estimates were adjusted by age groups. This procedure was continue in an iterative process until all group proportions in the sample approached those of the population, or were stopped after 75 iterations.

Weighted data analysis techniques were used to analyze 2011 BRFSS survey to generate population based estimates of health indicators. The Final weight variable was used in these analyses.

Weight Trimming in Raking

Weight trimming was used to increase the value of extremely low weights and decrease the value of extremely high weights. The objective of weight trimming was to reduce errors in the outcome estimates caused by unusually high or low weights in some categories.

Data Reliability

Telephone interviewing has been demonstrated to be a reliable method for collecting behavioral risk data and can cost three to four times less than other interviewing methods such as mail-in interviews or face-to-face interviews. The BRFSS methodology has been utilized and evaluated by the CDC and other participating states since 1984. Content of 2011 BRFSS survey questions, questionnaire design, data collection procedures, surveying techniques, and editing procedures had been thoroughly evaluated to maintain overall data quality and to lessen the potential for bias within the population sample.

RESPONSE RATE

The CASRO (Council of American Survey Research Organizations) response rate was used as a measure of quality of data. The 2011 Kansas BRFSS achieved a rate of 58.2% indicating reliable results. The CASRO formula was based on the number of interviews completed, the number of households reached, and the number of households with unknown eligibility status. The CASRO response rate was used because in addition to those persons who refused to answer questions, lack of response can also arise because household members were not available despite repeated call attempts, or household members refused to pick up the phone based on what they detect from caller ID.

DATA ANALYSIS

The weighted data analysis was conducted to estimate overall prevalence of the risk factors, diseases and behaviors among adults 18 years and older in Kansas. On some questions which pertain to a particular topic, only respondents who responded in a specific way [subpopulation] on an initial question continue to the next question. Though the subsequent question was asked from those respondents who responded in a particular manner on initial question, analysis for the subsequent question was based on the denominator that includes all respondents who responded to the initial question (in any manner). Therefore, the results presented were on all respondents vs. the subpopulation. Questions which have this approach applied were indicated with the statement "Denominator adjusted to represent the prevalence in the overall population". In addition to overall prevalence estimates, stratified analyses were also conducted to examine burden of a public health

issue within different population subgroups based on socio-demographic factors, risk behaviors and co-morbid conditions. In addition, data analysis was also conducted using population density groups. The definition and designations of these groups were described below:

The weighted data analysis techniques applied for the analysis of 2011 survey data were the same as in previous years. Adoption of new survey methodology for 2011 and subsequent years did not affect the analytical approach for BRFSS data analyses to generate estimates of the health indicators.

QUESTIONNAIRE DESIGN

The 2011 BRFSS survey conducted by all states consisted of a core section and optional modules/state-added questions section. The Core section of the survey was consistent across all states as this section included questions prescribed by the CDC. The optional modules were selected by the states from a bank of CDC-supported modules. Additionally, each state designed its own modules (state-added modules). The 2011 Kansas BRFSS used a split questionnaire design. It consisted of the core section, which was asked of all respondents and then the survey splits into two “branches” of optional modules/state-added modules. Once respondents had been asked the core questions, they were either asked questions in questionnaire A (also called Part A) or questionnaire B (also called Part B) of the survey. Respondents were randomly assigned to one of these two arms of the survey. Approximately half of the respondents received questionnaire A and the remaining received questionnaire B.

Advantages of the 2011 survey split questionnaire:

- Collected data on numerous topics within one data year
- Collected in-depth data on one specific topic
- Kept the interview time and questionnaire length to a minimum

Disadvantages of the 2011 survey split questionnaire:

- Added to the complexity of data weighting; additional weighting factors were needed
- Variables on questionnaire A could not be analyzed with variables on questionnaire B

Analysis of the 2011 survey split questionnaire:

The sample size for each split of the questionnaire was approximately half of the total sample size. As mentioned above, each respondent was randomly assigned to questionnaire A or to questionnaire B. The questions regarding certain conditions were included in the core section (e.g., asthma, disability, high blood pressures, etc.). State added questions and optional modules for these conditions were included on questionnaire A or questionnaire B. Therefore, these additional questions on a specific health condition were asked to the respondents who were assigned to that particular split questionnaire. This resulted in approximately half of the respondents who had a particular condition from the core section respond to additional questions on the specific condition.

Also, the number of adults with the specific health condition might vary on each question due to respondents terminating at various points in the survey.

TYPES OF QUESTIONS ON THE BRFSS

The 2011 BRFSS questionnaire was designed by the Centers for Disease Control and Prevention, state BRFSS Coordinators, and each individual state's survey selection committee. The questionnaire had three components: core questions, optional modules, and state added questions.

- **Core questions** were asked by all states and included approximately 97 questions (though this may vary somewhat from year to year). The order the questions appear and the wording of the question was exactly the same in all states. Types of core questions included fixed, rotating, and emerging health issues.
 - Fixed core: contains questions that were asked every year. Fixed core topics included 71 questions on health status, health care access, healthy days, disability, demographics, tobacco use, alcohol use, seatbelt use, exercise, immunization, HIV/AIDS, chronic health conditions.
 - Rotating core: Included questions that were asked every other year. The 2011 survey included 16 rotating core questions on fruits and vegetables, hypertension awareness, cholesterol awareness, and arthritis burden.
 - Emerging Health Issues: The 2011 survey included 10 questions on late breaking health issues.
- **Optional Modules** included questions on a specific health topic. The CDC provided a pool of questions from which states may select. States had the option of adding these questions to their survey. The CDC's responsibilities regarding these questions included development of questions, cognitive testing, financial support to states to include these questions on their questionnaire, data management, limited analysis and quality control. The optional modules included in 2011 Kansas BRFSS survey were comprised of questions on random child selection, childhood asthma, pre-diabetes, diabetes, actions to control high blood pressure, heart attack and stroke, chronic obstructive pulmonary disease, arthritis management, anxiety and depression, inadequate sleep, tetanus diphtheria (adults), childhood immunization, and veterans health.
- **State-added questions** were based on public health needs of each state. In 2011 Kansas BRFSS survey, state added modules included questions on average hours worked, breast cancer screening, childhood diabetes, diabetes assessment, tobacco related issues, doctor advised smoking cessation, fruits and vegetables tax, depression treatment, tetanus diphtheria (adolescents), oral health, disability barrier to attend work or school, suicide, and sexual violence.

LIMITATIONS

Sampling

The BRFSS survey sampling methods were discussed in the methodology section. Sampling yielded results which were an estimate of the true answer for the entire population. The higher the number of persons interviewed, the greater the precision of the estimate. When the data were subdivided to look at sub-populations (e.g., an age subgroup) these estimates might be less precise; if the number of persons interviewed was small because the subgroup represents a small fraction of the population (e.g., diabetics less than 30 years old), the estimate might become too uncertain to be of value. Because the survey was conducted by telephone, persons without telephones could not be reached. Since phone ownership was highly correlated to income, persons without a phone were more likely to have low incomes than persons with a telephone. This might affect questions with responses that were highly dependent on income (e.g., health insurance) more than other questions. However, because phone ownership was high in Kansas (greater than 95%), it was unlikely that failing to reach these persons would substantially alter results.

From 2011 onwards, inclusion of cellular telephone only service (and cellular telephone mostly service) households in addition to landline telephone service households will further assist in maintaining the representativeness of the survey sample to the general population.

Questionnaire Administration

How a question was written and which questions preceded it in the questionnaire could influence responses in unpredictable ways. Not all the questions used in the survey had been tested to ensure that all persons understand the intended meaning. Those that come from modules created by the Centers for Disease Control and Prevention usually had been tested, while some of the questions in state modules were not tested. Furthermore, not all questions were equally easy for respondents to answer. While it might be easy for a respondent to provide a personal opinion, it might be much harder to recall a past event (last mammogram) or provide factual information (household income).

Interviewers are trained and monitored to ensure that they administered the survey in a neutral voice and read the written question verbatim and without comment. Nonetheless, it was possible for the interviewer to bias the results through tone of voice or administration technique. Coding errors might also occur if the interviewer types in the wrong response to the question. In addition, the person being interviewed might alter his or her response to give the interviewer the most socially acceptable answer. This might be a problem especially for questions which might have a perceived stigma (e.g., HIV risk).

Response Rate

The bias from non-response could not be removed and it was not possible to know if those who

refused to respond would have answered the questions in approximately the same ways as those who responded.

Confounding and Causation

Personal characteristics which were presented in this report were univariate (i.e., examine each risk factor in relationship to only one characteristic at a time); however, the complexity of health associations were not fully represented by examining single relationships. For example, an examination of diabetes and employment status might show a greater prevalence of diabetes among persons who were retired than among persons who were employed. However, retired persons were expected to be older than persons who were employed; consequently, this relationship might entirely disappear if we controlled for the effects of age, (if this was the case we would say that the relationship between diabetes and employment status was being confounded by age.)

Likewise, this report did not attempt to explain the causes of the health effects examined. For instance, BRFSS data might show a higher prevalence of heart disease among smokers, but one should not conclude from this that smoking causes heart disease. That smoking was indeed a causal factor for heart disease is apparent from a large body of scientific data, but that was not a conclusion that could be drawn from a cross-sectional survey such as this. Rather this was a "snapshot" of disease, risk factors, and population characteristics for adult residents of Kansas at a point in time.

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